

Quality Assurance Project Plan
Municipal Separate Storm Sewer System Discharge Sampling

NPDES Permit No. IDS028215
City of Coeur d'Alene, Idaho

Prepared for:



Prepared by:



November 2022



Table of Contents

Approvals & Distribution List.....	ii
Acronyms and Abbreviations	iii
Section 1 – Project Management.....	1
1.1 Problem Background	2
1.2 Special Training	2
1.3 Documents and Records.....	2
Section 2 – Data Generation and Acquisition.....	4
2.1 Sampling Methods	5
2.2 Sample Handling and Custody	5
2.2.1 Chain of Custody and Documentation	5
2.3 Analytical Methods.....	6
2.4 Quality Objectives and Criteria.....	7
2.5 Quality Control.....	8
2.5.1 Laboratory Quality Control Procedures	8
2.6 Instrument/Equipment Testing, Inspection, & Maintenance.....	8
2.7 Instrument/Equipment Calibration and Frequency.....	8
2.8 Inspection/ Acceptance of Supplies and Consumables	9
2.9 Nondirect Measurements.....	9
2.10 Data Management.....	9
Section 3 – Assessment and Oversight.....	10
Section 4 – Data Validation and Usability	11
Section 5 – References	11
Appendix A – NPDES Permit	A
Appendix B – Accurate Testing Labs Quality Manual	B
Appendix C – Accurate Testing Labs Sampling Requirements.....	C
Appendix D – Accurate Testing Labs Chain of Custody Form	D



Quality Assurance Project Plan
Municipal Separate Storm Sewer System Discharge Sampling
City Of Coeur d'Alene, Idaho
NPDES Permit No. IDS028215

Approvals & Distribution List

City of Coeur d'Alene Program Manager

Date:

Todd Feusier

City of Coeur d'Alene City Engineer

Date:

Chris Bosley

Idaho Department of Environmental Quality

Date:



Acronyms and Abbreviations

CDA	City of Coeur d'Alene
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program [USEPA]
DQO	Data Quality Objective
IDEQ	Idaho Department of Environmental Quality
MS4	Municipal Separate Storm Sewer System
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
PE	Professional Engineer
PM	Program Manager
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RTL	Review Team Leader
USEPA	U.S. Environmental Protection Agency

Section 1 – Project Management

This QAPP is intended to cover the monitoring requirements of NPDES Permit Number IDS028215. The Permittee is the City of Coeur d'Alene, Idaho. The QAPP and its supporting attachments have been developed to document:

- 1) Map with GPS coordinates indicating the location of each monitoring point.
- 2) Training of all personnel involved with water quality and discharge sampling.
- 3) Specifications for the collection and analysis of samples for each sampling event.
- 4) Names, addresses, and telephone numbers of laboratories used by, or proposed to be used by, the Permittee.
- 5) Sampling effort including:
 - number of samples
 - identified sampling locations
 - type of sample containers
 - holding times
 - analytical methods
 - precision and accuracy requirements
 - sample preparation requirements
 - sample shipping methods
 - laboratory data delivery requirements

This QAPP follows the EPA-approved sample collection and analysis activities and chain-of-custody procedures contained in *USEPA Guidance for Quality Assurance Project Plans* (USEPA, 2002) and *USEPA Requirements for Quality Assurance Project Plans* (USEPA, 2001). Key roles or job functions for this project are described below and are included in the overall program organization chart in Figure 1.

Permittee Program Manager: The CDA PM is responsible official managing the financial, schedule, staffing, and technical aspects of the work. Todd Feusier is the PM, and will be responsible for maintaining the official, approved QAPP.

Permittee Review Team Leader: The CDA RTL will review project planning documents, data evaluation, and deliverables. The primary responsibility for project quality rests with the PM, and independent quality control (QC) is provided by the RTL. Chris Bosley, PE is the RTL.

Analytical Laboratory: The analytical laboratories are responsible for assuring analyses performed meet the QAPP requirements and the laboratory standard operating procedures. Laboratory analyses of samples will be performed at Accurate Testing Labs in CDA, Idaho. The Permittee will deliver all samples to Accurate Testing Labs. Contact information for Accurate Testing Labs is:

7950 Meadowlark Way
Coeur d'Alene, ID 83815
208-762-8378

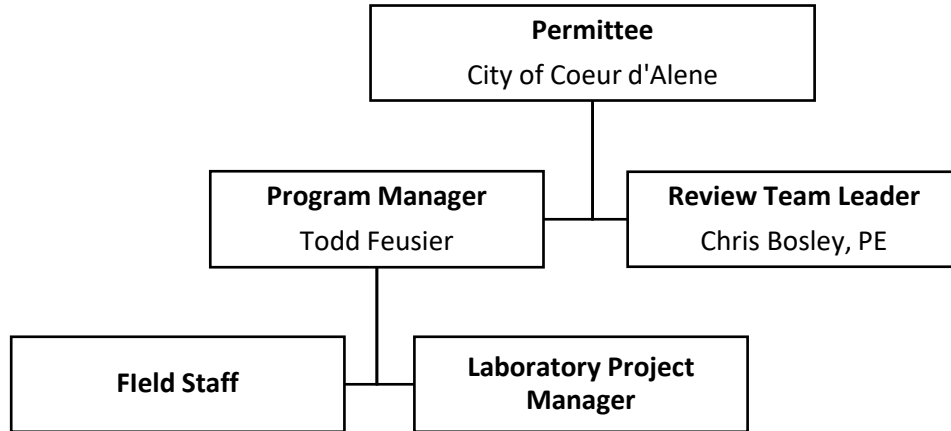


Figure 1: Monitoring Organization Chart

1.1 Problem Background

Lake Coeur d'Alene and the Spokane River are vital ecological, cultural, industrial, and recreational facilities in north Idaho. Under the NPDES permit, the Permittee is required perform wet weather discharge monitoring at two MS4 outfalls. The data collected will be used to:

- estimate pollutant loading from the Permittee's MS4, and
- assess effectiveness of control measures implemented to reduce pollutant loading.

Surface water monitoring is required to estimate pollutant loading from the Permittee's MS4. The NPDES permit lists the following pollutant parameters:

- **Discharges into Spokane River:** Lead, Zinc, Total Phosphorus
- **Discharges into Coeur d'Alene Lake:** Cadmium, Lead, Zinc, Total Phosphorus

The Permittee's MS4 watershed drains approximately 860 acres into the Spokane River and 1,820 acres into Lake Coeur d'Alene as shown in Figure 2. A total of 14 outfalls are associated with the MS4, nine discharge to Lake Coeur d'Alene and five discharge to the Spokane River.

1.2 Special Training

All field personnel must be familiar with general environmental sampling procedures and follow health and safety policies set forth by the Permittee. Documentation and tracking of this training will be the responsibility of the PM.

1.3 Documents and Records

Field activities, discharge monitoring, sampling results, and data analysis and evaluation will be documented and retained for five years or the term of the NPDES Permit, whichever is longer. This information will be summarized in the annual reports. Laboratory data will be recorded in USEPA CLP or similar format including sample identification, analysis data, parameter values, and detection limits. Analytical data from the laboratory and field collected measurements will be managed and retained electronically by the PM.

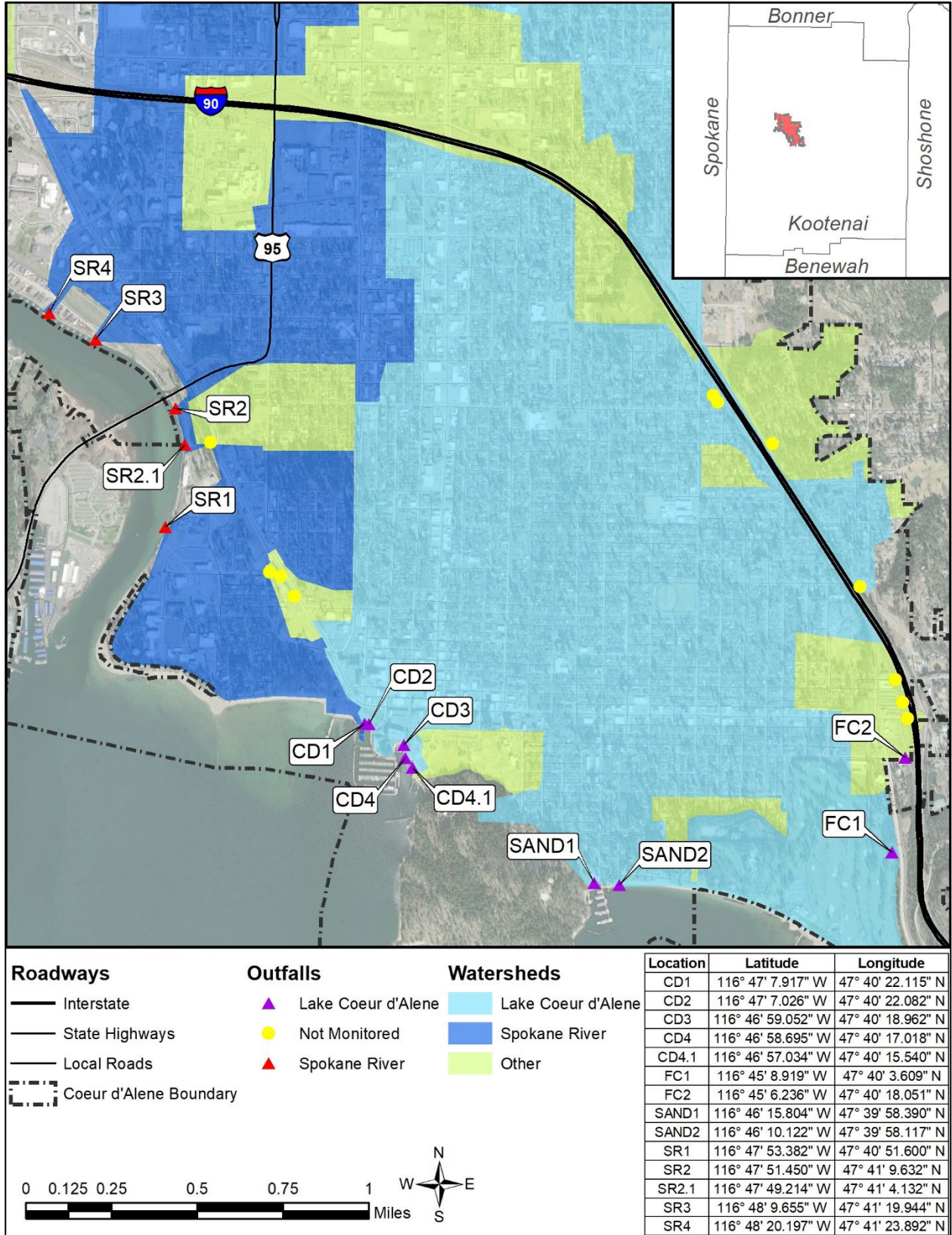


Figure 2: CDA MS4 Watershed and Outfalls



Section 2 – Data Generation and Acquisition

The NPDES permit requires a minimum of four samples collected from two monitoring locations during the calendar year. The Permittee will collect a minimum of four samples during the calendar year from the Spokane River and four samples from Lake Coeur d’Alene. At least one sample must be collected in the September – October period. The water quality sampling from the MS4 discharge monitoring locations is dictated by the occurrence of storm events. In the *NPDES Storm Water Sampling Guidance Document* (USEPA, 1992), a storm event is defined to mean the following:

- the depth of the storm must be greater than 0.1-inch accumulation,
- the storm must be preceded by 72 hours of dry weather, and
- where feasible, the depth of the rain and duration of the event should not vary by more than 50 percent of the average depth and duration.

Storm events will be tracked using the NOAA Coeur d’Alene Airport – Pappy Boyington Field weather station (<https://w1.weather.gov/data/obhistory/KCOE.html>). If the NPDES storm conditions are met, water quality samples will be collected from outfalls within the first 60 minutes of the storm event. If precipitation data from the NOAA Coeur d’Alene Airport – Pappy Boyington Field weather station is found to insufficiently quantify storm events in a manner that allows for sampling to occur in a timely manner, a separate precipitation monitoring location within the MS4 service area may be established.

The majority of the Permittee’s MS4 outfalls are underwater during high water conditions in Lake Coeur d’Alene and the Spokane River. Therefore, it is necessary to move the monitoring locations upstream within the MS4 system to collect discharge and water quality data that is representative of actual conditions.

Monitoring parameters are defined in Table 1. This provides a summary of recommended container sizes, container types, and holding times for each analysis along with the number of samples to be collected during monitoring event.

Table 1: Sampling Requirements

Pollutant	Sampling Requirements
Total Phosphorus	Container: 500-mL plastic bottle Holding Time: 28 days Samples: 1 sample
Total Metals (Cadmium, Lead, and Zinc)	Container: One 500-mL plastic bottle Holding Time: 6 months Samples: 1 sample

2.1 Sampling Methods

Samples will be collected within the MS4 system. At each sampling location, all sample bottles/containers designated for a particular analysis will be filled sequentially before containers designated for another analysis are filled. If a QC sample is to be collected at a given location, all containers designated for a particular analysis for both the sample and QC sample will be filled sequentially before containers for another analysis are filled. All samples will be collected and delivered as follows.

- Water quality samples will be collected using automated sampling devices or grab-samples.
- Following sample collection, the samples will be labeled, placed in a plastic bag, and cooled.
- The samples will be delivered to the analytical laboratory. Samples collected from different outfalls will be kept separate at all times.

2.2 Sample Handling and Custody

The samples must be traceable from collection to laboratory delivery. Field documents including sample custody seals, and chain-of-custody records will be obtained from the laboratory. Chain-of-custody procedures will be used to maintain and document sample collection and possession. After sample packaging, the appropriate chain of-custody form will be completed. The PM will be responsible for retaining and tracking chain-of-custody forms for the program. Copies of the form will be filled out and distributed in accordance with the instructions for sample shipping and documentation.

2.2.1 Chain of Custody and Documentation

Chain-of-custody procedures are followed to document sample possession as described below:

Definition of Custody: A sample is under custody if one or more of the following criteria are met:

- It is in your possession
- It is in your view, after being in your possession
- It was in your possession and then you locked it up to prevent tampering
- It is in a designated secure area

Field Custody: To the extent possible, the sample quantity, types, and locations are determined before the actual fieldwork. As few people as possible should handle samples. The field sampler is personally responsible for the care and custody of the samples until they are transferred or dispatched properly. The PM determines whether proper custody procedures were followed during the field work and decides whether additional samples are required.

Transfer of Custody and Shipment: Samples are accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving the samples sign, date, and note the time on the record. This record documents custody transfer from the sampler, often through another person, to the analyst at the laboratory. Samples are packaged properly and delivered to the laboratory for analysis with a separate chain-of-custody record. Shipping



containers will be sealed with custody seals for delivery to the laboratory. Freight bills, postal service receipts, and bills of lading are retained as part of the permanent documentation.

Custody Seals: When samples are shipped to the laboratory, they must be placed in containers sealed with custody seals. One or more custody seals must be placed on each side of the shipping container.

Field Notebooks: In addition to chain-of-custody records, the PM will maintain a daily record of significant events, observations, and measurements during sample collection. All entries will be signed and dated. These records are intended to provide sufficient data and observations enabling participants to reconstruct events that occurred during the project, and to refresh the memory of the field personnel if called upon.

Corrections to Documentation: All original data recorded in field notebooks, sample identification tags field data forms, receipts-for-sample forms, and chain-of-custody forms. None of these accountable documents are to be destroyed or thrown away, even if they are illegible or contain inaccuracies that require a replacement document. If an error is made on an accountable document the PM may make corrections simply by drawing a single line through the error and entering the correct information. The erroneous information should not be obliterated. Any subsequent error discovered on an accountable document should be corrected by the person who made the entry. All subsequent corrections must be initialed and dated.

2.3 Analytical Methods

Project analytes and methods are listed in Table 2. The recommended container sizes, container types, and holding times for each analysis as well as the number of samples to be collected during each monitoring event are presented in Table 1.

Table 2: Sampling Requirements

Analytes	Analytical Method
Cadmium, Total	SM 3120B
Lead, Total	SM 3120B
Phosphorus, Total (as P)	EPA 365.1
Zinc, Total	SM 3120B

2.4 Quality Objectives and Criteria

The Data Quality Objectives (DQOs) for this program have been developed following the EPA's *QA/G-4 Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA 2006). The specific data needs for the MS4 NPDES discharge monitoring focus on the collection of stormwater discharge flow data and water quality data to estimate pollutant loads and the adequacy and effectiveness of control measures implemented as part of the NPDES permit.

The QA objective of this plan is to identify procedures and criteria that will provide data of known and appropriate quality. Data quality is assessed by representativeness, comparability, accuracy, precision, and completeness. These parameters, the applicable procedures, and level of effort are described below.

The applicable QC procedures, quantitative target limits, and level of effort for assessing data quality are dictated by the intended use of the data as well as the nature of the analytical methods. Following are definitions and levels of effort for the data assessment parameters:

Representativeness is a measure of how closely the results reflect the actual concentration or distribution of the chemical compounds in the matrix samples. Sampling plan design, sampling techniques, and sample-handling protocols (for example, for storage, preservation, and transportation) have been developed, and are discussed in subsequent sections of this document. The proposed documentation will establish that protocols have been followed and sample identification and integrity are ensured.

Comparability expresses the confidence with which one data set can be compared to another. Data comparability will be maintained using defined procedures and the use of consistent methods and consistent units.

Accuracy is an assessment of the closeness of the measured value to the true value. For samples, accuracy of chemical test results is assessed by spiking samples with known standards and establishing the average recovery. For a matrix spike, known amounts of a standard compound identical to the compounds being measured are added to the sample. Accuracy measurement will be carried out with a minimum frequency of 1 in 20 samples analyzed or once per sampling event.

Precision of the data is a measure of the data spread, when more than one measurement has been taken on the same sample. Precision can be expressed as the relative percent difference. The level of effort for precision measurements will be a minimum of 1 in 20 samples or once per sampling event.

Completeness is a measure of the amount of valid data obtained from the analytical measurement system and the complete implementation of defined field procedures. The target completeness objective will be 95 percent, and the actual completeness may vary depending on the intrinsic nature of the samples. The completeness of the data will be assessed during QC reviews.

2.5 Quality Control

QC requirements are detailed in the following subsections.

2.5.1 Laboratory Quality Control Procedures

Laboratory QC is the responsibility of the personnel and QA/QC department of the contracted analytical laboratory. The laboratory's Quality Assurance Manual details the QA/QC procedures it follows including matrix spiked QC. Laboratory QC procedures will include the following:

- Analytical methodology and QC according to methods listed in Table 2.
- Instrument calibration and standards as defined in the methods listed in Table 2.
- Laboratory blank measurements at a minimum 5 percent or 1-per-batch frequency
- Accuracy and precision measurements at a minimum of 1 in 20, 1 per set.
- Data reduction and reporting according to the methods listed in in Table 2.
- Laboratory documentation equivalent to the USEPA CLP.

2.6 Instrument/Equipment Testing, Inspection, & Maintenance

Instrument maintenance logbooks are maintained in laboratories at all times. The logbooks contain a schedule of maintenance as well as a complete history of past maintenance.

Preventative maintenance is performed according to the procedures described in the manufacturer's instrument manuals including lubrications, source cleaning, detector cleaning, and the frequency of such maintenance. Precision and accuracy data are examined for trends and excursions beyond control limits to determine evidence of instrument malfunction. Maintenance will be performed when an instrument begins to degrade as evidenced by the degradation of peak resolution, shift in calibration curves, decrease in sensitivity, or failure to meet one or another of the QC criteria.

Instrument downtime is minimized by keeping adequate supplies of all expendable items (expected lifetime of less than one year). These items include gas tanks, filters, syringes, ferrules, printer paper and ribbons, and pump oil. Preventative maintenance for field equipment (for example, pH meters) will be carried out in accordance with procedures and schedules outlined in the particular model's operation and maintenance handbook.

2.7 Instrument/Equipment Calibration and Frequency

Laboratory calibration procedures are specified in the methods referenced in in Table 1. All calibrations will be at the following minimum level of effort:

- Initial calibration will include three-point calibration at a minimum unless specified otherwise by standard EPA method.
- Continuing calibration for all methods will include a mid-range calibration standard after every tenth sample or every 12 hours otherwise by standard EPA method.

2.8 Inspection/Acceptance of Supplies and Consumables

Supplies and consumables will be acquired and inspected in accordance with acquisition specifications upon receipt. All sample containers that will be used for the project will be “certified clean”.

2.9 Nondirect Measurements

Additional information may be obtained to support monitoring program objectives such as computer databases, programs, literature files, and historical databases. All data from outside sources will be reviewed against the acceptance criteria prior to use. An example of an outside data source typically utilized by the program is the meteorological data obtained from the NWS. Where this data is used, it will be identified in project records and required reporting documents.

2.10 Data Management

Data obtained as part of the MS4 NPDES discharge monitoring program will be maintained in Excel spreadsheets and other electronic databases as required.

Section 3 – Assessment and Oversight

The RTL and PM will monitor the performance of the QA procedures. If QA issues arise, the RTL may conduct an audit. The audit may be scheduled to evaluate

- the execution of sample identification, chain-of-custody procedures, field notebooks, sampling procedures, and field measurements;
- whether trained personnel staffed the sample event;
- whether equipment was in proper working order;
- availability of proper sampling equipment;
- whether appropriate sample containers, sample preservatives, and techniques were used;
- whether sample packaging and shipment were appropriate; and
- whether QC samples were properly collected.

Audits will be followed up with an audit report prepared by the auditor. The auditor will also debrief the PM or field team at the end of the audit and request the field team comply with the corrective action report.

If QC audits result in detection of unacceptable conditions or data, the PM will be responsible for developing and initiating corrective action. The PM will decide whether any corrective action should be pursued. Corrective action may include the following:

- Reanalyzing samples if holding time criteria permit
- Re-sampling and analyzing
- Evaluating and amending sampling and analytical procedures
- Accepting data acknowledging a level of uncertainty

The annual report is due December 1 of each year, and the report period spans from October 1 through September 30 of the reporting year. Monitoring requirements are listed in Table 3. These requirements will be reviewed as part of the performance of the QA procedures.

Table 3: Monitoring Requirements

Analytes	Minimum Testing Level ¹	Sample Location	Sample Frequency	Sample Type
Cadmium, Total	0.1 µg/L	CDA Lake	4/year ²	Grab
Lead, Total	0.16 µg/L	CDA Lake & Spokane River	4/year ²	Grab
Phosphorus, Total (as P)	10 µg/L	CDA Lake & Spokane River	4/year ²	Grab
Zinc, Total	2.5 µg/L	CDA Lake & Spokane River	4/year ²	Grab

¹ Maximum levels are not included in the NPDES Permit.

² At least one sample each calendar year must be collected in the September - October period.

Section 4 – Data Validation and Usability

Data verification will be conducted by the laboratory prior to submission to the Permittee. The PM will review the data to determine if the data are of sufficient quality to support the project objectives. After the data review is completed, data qualifiers may be appended to the measurement values.

Initial data reduction, validation, and reporting at the laboratory will be performed as described in the laboratory standard operating procedures. The PM will review the laboratory data reduction, validation, and reporting. The PM will communicate with the laboratory QA manager to determine the cause of any poor results noted and plot out a corrective action that will be documented in the project records.

The PM will make an overall assessment concerning the final usability of field and laboratory data. The PM will identify data usability and/or limitations in supporting project objectives and decision making. In addition, the PM will assess the effectiveness of the monitoring program and data collection at the end of each calendar year. Sampling locations, frequency, list of analytical parameters, field measurement protocols, choice of the analytical laboratory, etc. will be modified as needed to reflect the changing needs and project objectives. This QA Project Plan will be revised and/or amended accordingly.

Section 5 – References

Guidance for Quality Assurance Project Plans. (QA/G-5). EPA, 2002.

Guidance on Systematic Planning Using the Data Quality Objectives Process (QA/G-4). EPA 2006.

Guidelines Establishing Test Procedures for the Analysis of Pollutants. CFR, Title 40, Pt. 136, 2013.

EPA Requirements for Quality Assurance Project Plans (QA/R-5). EPA, 2001

NPDES Storm Water Sampling Guidance Document. EPA, 1992.

The Uniform Federal Policy for Implementing Environmental Quality Systems. EPA, 2005.

USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. EPA, 2004.

USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. EPA, 1999.



Appendix A – NPDES Permit

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

**Authorization to Discharge Under The
National Pollutant Discharge Elimination System (NPDES)**

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et seq., as amended by the Water Quality Act of 1987, Public Law 100-4 (hereafter CWA),

**City of Coeur d'Alene
(hereinafter, "Permittee")**

is authorized to discharge from all municipal separate storm sewer system (MS4) outfalls in the Permit Area described in Part 1.1 to the Spokane River, Coeur d'Alene Lake, Fernan Creek, and other associated waters of the United States, in accordance with the conditions and requirements set forth herein.

A copy of this Permit must be kept as part of the Permittee's Stormwater Management Program (SWMP) documentation.

This Permit becomes effective **December 1, 2020**.

This Permit and the authorization to discharge expires at midnight, **September 30, 2025**.

The Permittee must reapply for authorization to discharge on or before **April 3, 2025**, (180 days before expiration of this Permit), pursuant to Part 8.2 (*Duty to Reapply*), if the Permittee intends to continue operation and discharges from the MS4 beyond the term of this Permit.

Daniel D. Opalski, Director
Water Division

SCHEDULE

1. Stormwater Management Program Document	
<i>Post SWMP Document(s) on at least one publicly accessible website - See Part 2.5.3 and Part 3.1.8</i>	December 1, 2021
<i>Update the SWMP Document to describe implementation of relevant requirements for discharges to impaired waters - See Part 4.</i>	December 1, 2022
2. Stormwater Management Program Control Measures	
<i>Begin Education & Outreach Activities - See Part 3.1</i>	October 1, 2021
<i>Implement all SWMP Control Measures in Part 3.</i>	April 3, 2025
3. Alternative Control Measure Requests	
<i>See Part 2.6 and Part 4.</i>	October 1, 2022
4. Monitoring/Assessment Plan	
<i>Submit a Monitoring/Assessment Plan</i>	October 1, 2022
<i>See Part 2.6, and Part 4.</i>	
<i>Conduct Monitoring/Assessment Activity</i>	April 3, 2025
5. Pollutant Reduction Activities for Discharges to Impaired Waters	
<i>Submit description of selected Pollutant Reduction Activities; See Part 2.6, and Part 4.</i>	October 1, 2022
<i>Implement least two (2) pollutant reduction activities.</i>	April 3, 2025
6. Annual Report	
<i>See Part 6.4, and Table 6.4.1</i>	December 1 of each year, beginning Calendar Year 2021
7. Twenty-Four Hour Notice of Noncompliance.	
<i>Permittee must report certain noncompliance by phone.</i>	Within 24 hours from when Permittee becomes aware of circumstances
<i>See Part 7.9.</i>	
8. NPDES Permit Renewal Application	
<i>See Part 8.2.</i>	April 3, 2025

Table of Contents

SCHEDULE	2
ACRONYMS	6
1 APPLICABILITY.....	7
1.1 Permit Area	7
1.2 Discharges Authorized Under this Permit.....	7
2 LIMITATIONS AND CONDITIONS	7
2.1 Compliance with Water Quality Standards.....	7
2.2 Snow Disposal to Receiving Waters	7
2.3 Stormwater Discharges Associated with Industrial or Construction Activity	7
2.4 Non-Stormwater Discharges.....	8
2.5 Permittee Responsibilities.....	9
2.6 Alternative Control Measure Requests	11
3 STORMWATER MANAGEMENT PROGRAM (SWMP) CONTROL MEASURES	13
3.1 Public Education and Outreach on Stormwater Impacts	13
3.2 Illicit Discharge Detection and Elimination	17
3.3 Construction Site Stormwater Runoff Control	23
3.4 Post-Construction Stormwater Management for New Development and Redevelopment..	26
3.5 Pollution Prevention/Good Housekeeping for MS4 Operations	29
4 SPECIAL CONDITIONS FOR DISCHARGES TO IMPAIRED WATERS	33
4.1 General Requirements	33
4.2 Monitoring/Assessment Activities	33
4.3 Pollutant Reduction Activities	34
5 REQUIRED RESPONSE TO EXCURSIONS ABOVE IDAHO WATER QUALITY STANDARDS	35
5.1 Notification	35
5.2 Adaptive Management Report	35
5.3 Review and Approval of Adaptive Management Report	36
5.4 Implementation.....	36
5.5 Reporting	36
5.6 Permit Revision.....	36
6 MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS.....	37
6.1 Compliance Evaluation.....	37

6.2	General Requirements for Monitoring/Assessment Activities.....	37
6.3	Recordkeeping.....	41
6.4	Reporting Requirements	41
6.5	Addresses	43
7	COMPLIANCE RESPONSIBILITIES	44
7.1	Duty to Comply.....	44
7.2	Penalties for Violations of Permit Conditions	44
7.3	Need to Halt or Reduce Activity Not a Defense	45
7.4	Duty to Mitigate	45
7.5	Proper Operation and Maintenance	46
7.6	Toxic Pollutants	46
7.7	Planned Changes.....	46
7.8	Anticipated Noncompliance	46
7.9	Twenty-Four Hour Notice of Noncompliance Reporting.....	46
7.10	Bypass of Treatment Facilities	47
7.11	Upset Conditions	47
7.12	Other Noncompliance	48
7.13	Removed Substances	48
8	GENERAL REQUIREMENTS	49
8.1	Permit Actions.	49
8.2	Duty to Reapply	49
8.3	Duty to Provide Information.....	49
8.4	Other Information.....	50
8.5	Signatory Requirements.....	50
8.6	Availability of Reports.....	51
8.7	Inspection and Entry	51
8.8	Property Rights.....	51
8.9	Transfers	51
8.10	State/Tribal Laws	51
8.11	Oil and Hazardous Substance Liability.....	52
8.12	Severability.....	52
8.13	Re-opener Clause.....	52

9 DEFINITIONS 53
APPENDIX B – SWMP DOCUMENT & ANNUAL REPORT TEMPLATES62

ACRONYMS

ACM	Alternative Control Measure
BMP	Best Management Practice
CFR	Code of Federal Regulations
CGP	Construction General Permit, i.e., the most current version of the <i>NPDES General Permit for Stormwater Discharges from Construction Activities in Idaho</i>
CWA	Clean Water Act
ERP	Enforcement Response Policy
EPA	United States Environmental Protection Agency, Region 10
FR	Federal Register
GIS	Geographic Information System
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter
MEP	Maximum Extent Practicable
ML	Minimum Levels
MS4	Municipal Separate Storm Sewer System
MSGP	Multi-Sector General Permit, i.e., the most current version of the <i>NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activities in Idaho</i>
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
pg/L	Picograms per Liter
PCB	Polychlorinated biphenyls
PDF	Portable Document Format
POTW	Publicly Owned Treatment Works
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
US	United States
USC	United States Code
WA	Washington
WD	EPA Region 10 Water Division
WDOE	Washington Department of Ecology

1 APPLICABILITY

1.1 Permit Area

This Permit covers all areas within the Coeur d'Alene Urbanized Area (see Part 9, *Definitions*) served by the municipal separate storm sewer system (MS4) owned and/or operated by the City of Coeur d'Alene (Permittee).

1.2 Discharges Authorized Under this Permit

During the effective dates of this Permit, the Permittee is authorized to discharge stormwater to waters of the United States from all portions of the MS4 within the boundaries of the Coeur d'Alene Urbanized Area that are owned and/or operated by the Permittee, subject to the conditions set forth herein.

Pursuant to Part 2.4. below, this Permit also conditionally authorizes the discharges from the Permittee's MS4 that are categorized as allowable non-stormwater discharges.

2 LIMITATIONS AND CONDITIONS

2.1 Compliance with Water Quality Standards

If the Permittee complies with all the terms and conditions of this Permit, it is presumed that the Permittee is not causing or contributing to an excursion above the applicable Idaho Water Quality Standards.

If monitoring or other information shows that a pollutant in the Permittee's MS4 discharge is causing or contributing to an excursion above the applicable Idaho Water Quality Standard, the Permittee must comply with the notification and other requirements outlined in Part 5 (*Required Response to Excursions of Idaho Water Quality Standards*), except where a pollutant of concern in the MS4 discharge is subject to the requirements of Part 4 (*Special Conditions for Discharges to Impaired Waters*) or is the result of an illicit discharge and subject to a Permittee response as outlined in Part 3.2.6 (*Follow-up*).

2.2 Snow Disposal to Receiving Waters

The Permittee is not authorized to dispose of snow plowed in the geographic area of permit coverage directly into waters of the United States, or directly into the MS4(s). Discharges from the Permittee's snow disposal and snow management practices are authorized under this Permit only when such practices and disposal sites are conducted, operated, designed, and maintained to reduce pollutants in the discharges pursuant to Part 3.5 (*Pollution Prevention/Good Housekeeping for MS4 Operations*) so as to avoid excursions above the Idaho Water Quality Standards.

2.3 Stormwater Discharges Associated with Industrial or Construction Activity

The Permittee is not authorized to discharge stormwater associated with industrial activity (as defined in 40 CFR §122.26(b)(14)), and/or stormwater associated with construction activity (as defined in 40 CFR §122.26(b)(14)(x) and (b)(15)), unless the discharges are otherwise authorized under the *NPDES General Permit for Stormwater Associated with Construction Activities in Idaho* (Idaho CGP), the *NPDES Multi-Sector General Permit for Stormwater Associated with Industrial Activities in Idaho* (MSGP), or another appropriate NPDES permit.

2.4 Non-Stormwater Discharges

The Permittee is not authorized to discharge non-stormwater from the MS4, except where such discharges satisfy one of the following conditions:

- 2.4.1 The non-stormwater discharge is in compliance with a separate NPDES permit; or
- 2.4.2 The discharge originates from emergency firefighting activities; or
- 2.4.3 The non-stormwater discharge results from a spill, and/or is the result of an unusual and severe weather event where reasonable and prudent measures have been taken to prevent and minimize the impact of such discharge; or
- 2.4.4 The non-stormwater discharge consists of emergency discharges required to prevent imminent threat to human health or severe property damage, provided that reasonable and prudent measures have been taken to prevent and minimize the impact of such discharges; or
- 2.4.5 The non-stormwater discharge falls under one of the allowable categories listed in Part 2.4.5.1 2.4.5.1 below, and the discharge is not a source of pollution to waters of the United States as defined in Part 2.4.5.2.

2.4.5.1 Categories of Allowable Non-Stormwater Discharges include:

- 2.4.5.1.1 Uncontaminated water line flushing;
- 2.4.5.1.2 Landscape irrigation (provided all pesticides, herbicides and fertilizer have been applied in accordance with manufacturer's instructions);
- 2.4.5.1.3 Diverted stream flows;
- 2.4.5.1.4 Uncontaminated ground water infiltration (as defined at 40 CFR § 35.2005(20)) to separate storm sewers;
- 2.4.5.1.5 Rising ground waters;
- 2.4.5.1.6 Uncontaminated pumped ground water;
- 2.4.5.1.7 Discharges from potable water sources;
- 2.4.5.1.8 Foundation drains and footing drains (where flows are not contaminated with process materials such as solvents);
- 2.4.5.1.9 Uncontaminated air conditioning or compressor condensate;
- 2.4.5.1.10 Irrigation water;
- 2.4.5.1.11 Springs;
- 2.4.5.1.12 Water from crawlspace pumps;
- 2.4.5.1.13 Lawn watering;
- 2.4.5.1.14 Individual residential car washing;
- 2.4.5.1.15 Flows from riparian habitats and wetlands;
- 2.4.5.1.16 Dechlorinated swimming pool discharges;
- 2.4.5.1.17 Routine external building washdown which does not use detergents;
- 2.4.5.1.18 Street and pavement washwaters where no detergents are used and no spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed); and
- 2.4.5.1.19 Fire hydrant flushing.

2.4.5.2 Sources of Pollution to Waters of the United States

A discharge is considered a source of pollution to waters of the United States if it contains:

- 2.4.5.2.1 Hazardous materials in concentrations found to be of public health significance or to impair beneficial uses in receiving waters. ("*Hazardous materials*" is defined in IDAPA 58.01.02.010.47 and Part 9 of this Permit); and/or
- 2.4.5.2.2 Toxic substances in concentrations that impair designated beneficial uses in receiving waters. ("*Toxic substances*" is defined at IDAPA 58.01.02.010.102 and Part 9 of this Permit); and/or
- 2.4.5.2.3 Deleterious materials in concentrations that impair designated beneficial uses in receiving waters. ("*Deleterious materials*" is defined at IDAPA 58.01.02.010.21 and Part 9 of this Permit); and/or
- 2.4.5.2.4 Radioactive materials or radioactivity at levels exceeding the values listed in 10 CFR § 20 in receiving waters; and/or
- 2.4.5.2.5 Floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or in concentrations that may impair designated beneficial uses in receiving waters; and/or
- 2.4.5.2.6 Excessive nutrients that can cause visible slime growths or other nuisance aquatic growths that impair designated beneficial uses in receiving waters; and/or
- 2.4.5.2.7 Oxygen-demanding materials in concentrations that would result in anaerobic water conditions in receiving waters; and/or
- 2.4.5.2.8 Sediment above quantities specified in IDAPA 58.01.02.250.02.e or in the absence of specific sediment criteria, above quantities that impair beneficial uses in receiving waters; and/or
- 2.4.5.2.9 Material in concentrations that exceed applicable natural background conditions in receiving waters (IDAPA 58.01.02.200. 09). Temperature levels may be increased above natural background conditions when allowed under IDAPA 58.01.02.401.

2.5 Permittee Responsibilities

2.5.1 Shared Implementation with Outside Entities

The Permittee may share or delegate implementation of one or more of the stormwater management control measures required by this Permit to another entity. The Permittee may rely on another entity if:

- 2.5.1.1 The other entity, in fact, implements the stormwater management control measure, or component thereof;
- 2.5.1.2 The particular stormwater management control measure, or component thereof, is at least as stringent as the corresponding Permit requirement; and
- 2.5.1.3 The other entity agrees to implement the stormwater management control measure, or component thereof, on the Permittee's behalf.

The Permittee and the outside entity must maintain a written and binding agreement between the parties. The written agreement must describe each organization's respective roles and responsibilities related to this Permit and identify all aspects of stormwater management where the entities will share or delegate implementation responsibility. Any previously signed agreement may be updated, as necessary, to comply with this requirement. Any such agreement must be described in the Permittee's SWMP Document required by Part 2.5.3,

and a copy of the agreement between parties must be available to EPA and/or IDEQ upon request. The Permittee remains responsible for compliance with the permit obligations if the other entity fails to implement the SWMP control measure (or component thereof).

2.5.2 Maintain Adequate Legal Authority

The Permittee must maintain relevant ordinances and/or regulatory mechanisms to control pollutant discharges into and from its MS4 and to comply with this Permit.

In the SWMP Document required by Part 2.5.3, the Permittee must summarize all of its legal authorities that address the six criteria listed below.

If existing ordinances and/or regulatory mechanisms are insufficient to meet the criteria, the Permittee must adopt new regulatory mechanisms.

No later than **April 3, 2025**, and to the extent allowable pursuant to authority granted the Permittee under applicable Idaho state law, the Permittee must develop and/or update (as needed) relevant ordinance or other regulatory mechanisms to:

- 2.5.2.1 Prohibit and eliminate, through statute, ordinance, policy, permit, contract, court or administrative order, or other similar means, illicit discharges to the MS4;
- 2.5.2.2 Control, through statute, ordinance, policy, permit, contract, court or administrative order, or other similar means, the discharge to the MS4 of spills, dumping or disposal of materials other than stormwater, pursuant to Part 3.2.3 (*Illicit Discharge Detection and Elimination – ordinance*);
- 2.5.2.3 Control the discharge of stormwater and pollutants from land disturbance and development, both during the construction phase and after site stabilization has been achieved, consistent with Parts 3.3 (*Construction Site Runoff Control Program*) and 3.4 (*Stormwater Management for Areas of New Development and Redevelopment*);
- 2.5.2.4 Control through interagency agreements as necessary or appropriate, the contribution of pollutants from one MS4 to another interconnected MS4;
- 2.5.2.5 Require compliance with conditions in ordinances, permits, contracts, or orders; and
- 2.5.2.6 Carry out all inspection, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with these Permit conditions, including the prohibition of illicit discharges to the MS4.

2.5.3 SWMP Document

The Permittee must maintain a written SWMP document, or documents, that describe in detail how the Permittee will comply with the required stormwater management (or SWMP) control measures in this Permit. As necessary the SWMP Document must be updated and must describe the Permittee's interim schedule(s) for implementation of any SWMP control measure components to be developed during the term of this Permit. The SWMP Document may be organized according to the outline provided in Appendix B.

No later than **December 1, 2021**, the Permittee's SWMP Document must be completed and made available through the website required in Part 3.1.8 (*Publicly Accessible Website*).

No later than **December 1, 2022**, the Permittee must update the SWMP Document to describe their intended implementation of relevant requirements specified in Part 4 including any associated interim implementation date(s). See Part 4 (*Special Conditions for Discharges*

to Impaired Waters).

The Permittee must submit to EPA and IDEQ an updated SWMP Document with the Permit Renewal Application. See Part 8.2.1.

2.5.4 SWMP Information

The Permittee must maintain a method of gathering, tracking, and using SWMP information to set priorities and assess Permit compliance. The Permittee must track activities and document program outcomes to illustrate progress on the respective SWMP control measure (e.g., the number of inspections, official enforcement actions, and/or types of public education actions, etc.), and cite relevant information reflecting the specific reporting period, in each Annual Report.

2.5.5 SWMP Resources

The Permittee must provide adequate finances, staff, equipment and other support capabilities to implement the control measures and other requirements outlined in this Permit.

2.5.6 Transfer of Ownership, Operational Authority, or Responsibility for SWMP Implementation

The Permittee must implement the required SWMP control measures of this Permit in all new areas added or transferred to the Permittee's MS4 (or for which a Permittee becomes responsible for implementation of SWMP control measures) as expeditiously as practicable, but not later than one (1) year from addition of the new areas. The Permittee must notify EPA and IDEQ in the next Annual Report of any additions or changes, and schedules for implementation in new areas, and must update their SWMP Document accordingly.

2.5.7 Best Management Practice (BMP) Selection¹

Best management practices (BMPs) must be designed, implemented, and maintained by the permittee to fully protect and maintain the beneficial uses of waters of the United States and to improve water quality at least to the maximum extent practicable.

When selecting BMPs, the permittee must consider and, if practicable, utilize practices identified in the *Idaho Department of Environmental Quality Catalog of Stormwater Best Management Practices for Idaho Cities and Counties* (<http://www.deq.idaho.gov/water-quality/wastewater/stormwater/>).

2.6 Alternative Control Measure Requests

2.6.1 General Requirement

The Permittee may request that EPA and IDEQ consider any alternative documents, plans, or programs that the Permittee believes to be equivalent to a required SWMP control measure, or control measure component, specified in Part 3 or Part 4 of this Permit.

Alternative documents, plans, or programs must be submitted pursuant to Part 2.6.3 (*Content of ACM Request*) for EPA and IDEQ review and consideration no later than **October 1, 2022**.

2.6.2 Actions to Address Discharges to Impaired Waters

For the purposes of this Permit, an Alternative Control Measure (ACM) also includes the

¹ This provision is a condition of the IDEQ's *Final §401 Water Quality Certification for the City of Coeur d'Alene Municipal Separate Storm Sewer System; NPDES Permit # IDS028215*, dated July 1, 2020.

Permittee's specific actions to address discharges to impaired waters as specified in Part 4 (*Special Conditions for Discharges to Impaired Waters*).

The Permittee must submit at least one Monitoring/Assessment Plan to assess pollutant discharges from the MS4 into the Spokane River and Coeur d'Alene Lake as required by Part 4.2. The Permittee must submit a written description of at least two (2) Pollutant Reduction Activities to address impairment pollutants identified in Part 4.3. These documents must be submitted pursuant to 2.6.3 for EPA review and consideration no later than **October 1, 2022**.

2.6.3 Content of Alternative Control Measure Request

In support of its ACM Request, the Permittee must submit a complete copy of the relevant alternative document, plan, or program, and include:

- 2.6.3.1 A detailed written discussion identifying the original required minimum SWMP control measure, or control measure component, that is addressed by the Permittee's submittal, and the reasons, rationale, citations, and/or references sufficient to demonstrate that the alternative document, plan, or program meets or exceeds the requirements of the original SWMP control measure, or control measure component, it is meant to replace;
- 2.6.3.2 A detailed schedule the Permittee intends to follow to enact the ACM in its jurisdiction prior to the expiration date of this Permit; and
- 2.6.3.3 A description of any local public notice or public engagement process, including relevant results of such public engagement, that the Permittee conducted regarding the ACM prior to submittal.

2.6.4 Recognition of Alternative Control Measures

Upon receipt of a Permittee's ACM Request and in consultation with IDEQ, EPA will assess if the document, plan, or program meets the requirements of this Permit to be deemed equivalent to the SWMP control measure or control measure component.

If EPA determines that the document, plan, or program meets the requirements of this Permit, EPA will modify this Permit to reference the ACM. When new, specific permit terms or conditions are warranted, EPA will notify the Permittee and the public of its intent to add such terms or conditions to this Permit. EPA will accept public comment for a minimum of 30 days on additional permit terms or conditions pursuant to 40 CFR §§ 122.62 and 124.

As specified in Part 8.1 (*Permit Actions*), a Permittee's ACM Request does not stay any permit condition and does not replace the required SWMP control measure or control measure component until EPA completes a permit revision procedure as outlined above. Upon completion of a permit revision, EPA will notify the Permittee, in writing, of its final decision to authorize the Permittee's ACM.

3 STORMWATER MANAGEMENT PROGRAM (SWMP) CONTROL MEASURES

3.1 Public Education and Outreach on Stormwater Impacts

The Permittee must continue to conduct, or contract with other entities to conduct, an ongoing public education, outreach, and involvement program based on stormwater issues of significance in the Permittee's jurisdiction. When applicable, the Permittee must comply with State and local public notice requirements when conducting public involvement activities.

3.1.1 Compliance Dates

No later than **October 1, 2021**, the Permittee must begin implementation of the required SWMP control measure components described in Parts 3.1.2 through 3.1.8 below.

No later than **April 3, 2025**, the Permittee must fully implement all required components described in Parts 3.1.2 through 3.1.8 below.

- 3.1.1.1 If the Permittee seeks to comply with any SWMP control measure component, or combination of components, in this Part using one or more ACMs, the Permittee must submit a request in accordance with Part 2.6 (*Alternative Control Measure Requests*) no later than **October 1, 2022**.

3.1.2 Conduct a Public Education, Outreach and Involvement Program

The Permittee's public education and outreach program must include coordination and educational efforts targeting at least one of the four audiences listed in Part 3.1.4 below. The goal of the education and outreach program is to reduce the behaviors and practices that cause or contribute to adverse stormwater impacts on receiving waters by increasing audience understanding of actions they can take to prevent pollutants in stormwater runoff entering the MS4 and into local receiving waters.

The public involvement program must inform and engage interested stakeholders in the Permittee's development and implementation of the SWMP control measures, to the extent allowable pursuant to authority granted the individual Permittee under Idaho state law.

To be considered adequate, the Permittee's implementation of the public education, outreach and involvement program must include the activities in Parts 3.1.3 through 3.1.8 below.

3.1.3 Stormwater Education Activities

The Permittee must distribute and/or offer at least eight (8) educational messages or activities over the permit term to the selected audience(s) identified in Part 3.1.4 below.

Educational messages or activities may include printed materials such as brochures or newsletters; electronic materials such as websites; mass media such as newspaper articles or public service announcements; targeted workshops or other educational events; or other viable format. The Permittee may use existing materials if the materials convey the message the Permittee chooses to deliver. The Permittee may develop its own educational materials and means of delivering its message(s). Based on the target audience's demographic, the Permittee must consider delivering its selected messages and/or activities in an appropriate manner in language(s) other than English.

3.1.4 Target Audience(s) and Topics

The Permittee must, at a minimum, select at least one audience and focus its efforts on conveying relevant messages using one or more of the topics listed below for the selected

target audience. Topics listed are not exclusive, and the Permittee may focus its efforts on one or more audience(s) and topics most relevant to the community.

If the Permittee does not have legal authority over private property (i.e., a college, university, highway district, state department of transportation, school district, drainage district, and/or other public entity), the term "target audience" is clarified to mean any employees, consultants, students, clients, or members of the public for whom the Permittee provides its services.

3.1.4.1 General Public (including homeowners, homeowner's associations, landscapers, and property managers)

- General impacts of stormwater flow into surface water, and appropriate actions to prevent adverse impacts;
- Impacts from impervious surfaces and appropriate techniques to avoid adverse impacts;
- Yard care techniques protective of water quality, such as composting;
- BMPs for proper use, application and storage of pesticides, herbicides, and fertilizers;
- Litter and trash control and recycling programs;
- BMPs for power washing, carpet cleaning and auto repair and maintenance;
- Low Impact Development/green infrastructure techniques, including site design, pervious paving, retention of mature trees/vegetation, landscaping and vegetative buffers;
- Appropriate maintenance of landscape features providing water quality benefits;
- Source control BMPs and environmental stewardship;
- Impacts of illicit discharges and how to report them;
- Actions and opportunities for pet waste control/disposal,
- Water wise landscaping, water conservation, water efficiency.

3.1.4.2 Business/Industrial/Commercial/Institutions (including home based and mobile businesses)

- General impacts of stormwater flow into surface water, and appropriate actions to prevent adverse impacts;
- Impacts from impervious surfaces and appropriate techniques to avoid adverse impacts;
- BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, vehicle wash soaps and other hazardous materials;
- BMPs for power washing, carpet cleaning and auto repair and maintenance;
- BMPs for proper use, application and storage of pesticides, herbicides, and fertilizers;
- Low Impact Development/green infrastructure techniques, including site design, pervious paving, retention of mature trees/vegetation, landscaping and vegetative buffers;
- Appropriate maintenance of landscape features providing water quality benefits;
- Impacts of illicit discharges and how to report them;
- Litter and trash control and recycling programs
- Water wise landscaping, water conservation, water efficiency.

3.1.4.3 Construction/Development (e.g., Engineers, Contractors, Developers, Landscape Architects, Site Design Professionals)

- General impacts of stormwater flow into surface water, and appropriate actions to prevent adverse impacts;
- Impacts from impervious surfaces and appropriate techniques to avoid adverse impacts;
- Stormwater treatment and volume control practices;
- Technical standards for stormwater site plans; including appropriate selection, installation, and use of required construction site control measures
- Low Impact Development/green infrastructure techniques, including site design, pervious paving, retention of mature trees/vegetation, landscaping and vegetative buffers;
- Appropriate maintenance of landscape features providing water quality benefits;
- Water wise landscaping, water conservation, water efficiency.

3.1.4.4 Elected Officials, Land Use Policy and Planning Staff

- General impacts of stormwater flow into surface water, and appropriate actions to prevent adverse impacts;
- Impacts from impervious surfaces and appropriate techniques to avoid adverse impacts;
- Low Impact Development/green infrastructure techniques, including site design, pervious paving, retention of mature trees/vegetation, landscaping and vegetative buffers.

3.1.5 **Assessment**

The Permittee must begin to assess, or participate in one or more efforts to assess, the understanding of the relevant messages and adoption of appropriate behaviors by their target audience(s). The resulting assessments must be used to direct future stormwater education and outreach resources most effectively. Information summarizing the Permittee's incremental assessment of any specific education, outreach and/or public involvement activities conducted over the relevant reporting period must be included in each Annual Report.

3.1.6 **Tracking**

The Permittee must track and maintain records of their public education, outreach and involvement activities and include a descriptive summary of their activities in the corresponding Annual Report.

3.1.7 **Education on SWMP Control Measures**

For each SWMP control measure listed below, the Permittee must provide educational opportunities and materials for appropriate audiences in their jurisdiction.

- 3.1.7.1 **Outreach/Training on Construction Site Control Measures:** At least twice during the Permit term, the Permittee must provide educational materials for construction site operators working in their jurisdiction pertaining to the Permittee's requirements for appropriate selection, design, installation, use, and

maintenance of required construction site controls imposed by the Permittee as described in Part 3.3.3.

- 3.1.7.2 **Outreach/Training on Permanent Stormwater Controls:** At least twice during the Permit term, the Permittee must provide opportunity and/or conduct training sufficient to educate and ensure that engineers, site designers, and/or other locally appropriate audiences working in their jurisdiction are aware and informed of appropriate selection, design, installation, use, and maintenance of permanent stormwater controls imposed by the Permittee as described in Part 3.4.3.

3.1.8 **Publicly Accessible Website**

The Permittee must maintain and promote at least one publicly accessible website with information on the Permittee's SWMP implementation, points of contact, and educational materials for audience(s) listed in Part 3.1.4. The website must be updated at least annually prior to the submittal of Annual Reports to EPA, and/or as new material is available. The Permittee's website must incorporate the following minimum features:

- 3.1.8.1 **Phone numbers, and/or other direction** to assist the public to report illicit discharges, illicit connections, and illegal dumping activity;
- 3.1.8.2 **Reports, plans, strategies, or documents** generated by the Permittee in compliance with this Permit, in draft form when the Permittee is soliciting input from the public, and in final form when the document is completed;
- 3.1.8.3 **Information regarding ordinances, policies and/or guidance** documents related to the Permittee's requirements for construction and permanent stormwater management control, including education opportunities, training, licensing, and/or permitting process for the Permittee's jurisdiction; and
- 3.1.8.4 **Permittee contact information**, including phone numbers for relevant staff, mailing addresses, and electronic mail addresses.

3.2 Illicit Discharge Detection and Elimination

The Permittee must implement and enforce a program to detect and eliminate illicit discharges into the MS4, to the extent allowable pursuant to authority granted the individual Permittee under Idaho state law.

An illicit discharge is any discharge to an MS4 that is not composed entirely of stormwater. Any exceptions are conditional as identified in Part 2.4 (*Non-stormwater Discharges*).

3.2.1 Compliance Dates

No later than **April 3, 2025**, the Permittee must revise and update their existing illicit discharge management program as necessary to include the required components described in Parts 3.2.2 through 3.2.9 below.

- 3.2.1.1 If the Permittee seeks to comply with any SWMP control measure components, or combination of components, in this Part using one or more ACMs, the Permittee must submit a request in accordance with Part 2.6 (*Alternative Control Measure Requests*) no later than **October 1, 2022**.

3.2.2 MS4 Map and Outfall Inventory

The Permittee must update, or develop if not already completed, a map of their MS4 and all associated outfall locations under its operational control within the Permit Area.

The Permittee must maintain an outfall and interconnection inventory to accompany the MS4 map(s). The purpose of the inventory is to identify each outfall and interconnection discharging from the Permittee's MS4; record its location (by latitude and longitude) and overall physical condition; and provide a framework for the Permittee to track its outfall inspections, dry weather discharge screenings, maintenance, and other activities required by this Permit.

The Permittee may integrate these efforts into any existing asset management program, provided the Permittee explains its management approach in the SWMP Document required by Part 2.5.3.

No later than **April 3, 2025**, an electronic GIS version of the MS4 map, and the accompanying Outfall Inventory, must be submitted to EPA and IDEQ as part of the Permit Renewal Application required by Part 8.2. Prior to this date, all available GIS data layers must be shared with EPA and/or IDEQ upon request.

To be considered adequate, the MS4 Map and Outfall Inventory must depict and/or contain the following information:

- 3.2.2.1 Location of all inlets, catch basins, and outfalls owned/operated by the Permittee, including a unique identifier for each outfall, spatial location (latitude and

- longitude, with a minimum accuracy of +/-30 feet), and general information regarding dimensions, shape, material (concrete, polyvinyl chloride, etc.);
- 3.2.2.2 Location of all MS4 collection system pipes, open channel conveyances, (laterals, mains, etc.) owned/operated by the Permittee, including locations where the MS4 is physically interconnected to the MS4 of another operator;
 - 3.2.2.3 Location of structural flood control devices, if different from the characteristics listed above;
 - 3.2.2.4 Names and locations of waters of the U.S. that receive discharges from the inventoried MS4 outfalls, including an indication of all use impairments as identified by IDEQ in the most recent Integrated Report;
 - 3.2.2.5 Location of all existing permanent stormwater controls which are part of the MS4 owned and/or operated by the Permittee, including structural or treatment controls (e.g., detention and retention basins, infiltration systems, bioretention areas, swales, oil/water separators and/or other proprietary systems);
 - 3.2.2.6 Location and characteristics of any MS4 outfalls with ongoing dry weather flows identified by the Permittee as being caused by irrigation return flows and/or groundwater seepage; and
 - 3.2.2.7 Location of Permittee-owned vehicle maintenance facilities, material storage facilities, heavy equipment storage areas, maintenance yards, snow disposal sites; and Permittee-owned or operated parking lots and roads in areas served by the MS4.

3.2.3 Ordinance and/or other Regulatory Mechanisms

The Permittee must prohibit non-stormwater discharges into the MS4 (except those conditionally allowed by Part 2.4) through enforcement of an ordinance or other regulatory mechanism to the extent allowable under Idaho state law. The Permittee must implement appropriate enforcement procedures and actions, including a written policy of enforcement escalation procedures for recalcitrant or repeat offenders, to ensure compliance.

To be considered adequate, the ordinance or regulatory mechanism must:

- 3.2.3.1 Authorize the Permittee to control and respond to the discharge of spills into the MS4 to the extent allowable pursuant to authority granted the individual Permittee under Idaho state law;
- 3.2.3.2 Authorize the Permittee to prohibit illicit connections, and the dumping or disposal of materials other than stormwater, into the MS4; and
- 3.2.3.3 Authorize the Permittee to prohibit, and eliminate, at a minimum, the following discharges to the MS4 to the extent allowable pursuant to authority granted the individual Permittee under Idaho state law:
 - Sewage;
 - Discharges of wash water resulting from the hosing or cleaning of gas stations, auto repair garages, or other types of automotive services facilities;
 - Discharges resulting from the cleaning, repair, or maintenance of any type of equipment, machinery, or facility, including motor vehicles, cement-related equipment, and port-a-potty servicing, etc.;

- Discharges of wash water from mobile operations, such as mobile automobile or truck washing, steam cleaning, power washing, and carpet cleaning, etc.;
- Discharges of wash water from the cleaning or hosing of impervious surfaces in municipal, industrial, commercial, and residential areas - including parking lots, streets, sidewalks, driveways, patios, plazas, work yards and outdoor eating or drinking areas, etc., where detergents are used and spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed);
- Discharges of runoff from material storage areas containing chemicals, fuels, grease, oil, or other hazardous materials;
- Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;
- Discharges of sediment, pet waste, vegetation clippings, or other landscape or construction-related wastes; and
- Discharges of food-related wastes (grease, fish processing, and restaurant kitchen mat and trash bin wash water, etc.).

3.2.4 Illicit Discharge Complaint Report and Response Program

At a minimum, the Permittee must respond in the following manner to reports of illicit discharges from the public:

- 3.2.4.1 **Receipt of Complaints or Reports from the Public:** The Permittee must maintain a dedicated telephone number, email address, and/or other publicly available and accessible means (in addition to the website required in Part 3.1.8) for the public to report illicit discharges. This complaint/reporting function must be answered by trained staff during normal business hours. During non-business hours, a system must be in place to record incoming calls or reports, and to guarantee timely response by the Permittee. The Permittee's means of receiving complaints/reports from the public must be printed and/or advertised through the appropriate education, training, and public participation materials produced under Part 3.1 (*Public Education, Outreach and Involvement*).
- 3.2.4.2 **Response to Complaints or Reports from the Public:** The Permittee must respond to and investigate all complaints or reports of illicit discharges as soon as possible, but no later than within two (2) working days.
- 3.2.4.3 **Tracking of Complaints or Reports and Actions Taken:** The Permittee must maintain a log or other means of documenting all complaints or reports of illicit discharges into the MS4, and the response or action taken by the Permittee to address the complaint or report. Such program information must be summarized for the relevant reporting period and included in each Annual Report.

3.2.5 Dry Weather Outfall Screening Program

The Permittee must conduct a dry weather analytical and field screening monitoring program to identify non-stormwater flows from MS4 outfalls during dry weather. This program must emphasize screening activities to detect and identify illicit discharges and illegal connections, and to reinvestigate potentially problematic MS4 outfalls throughout the Permit Area defined in Part 1.1. At a minimum, this program must include the following SWMP control measure components:

- 3.2.5.1 **Outfall Identification and Screening Protocols:** The Permittee must use reconnaissance activities, information recorded through the complaint reporting program, and (if available) existing watershed assessment or Total Maximum Daily Load (TMDL) analyses, to prioritize and target outfalls for screening throughout their Permit Area defined in Part 1.1.

The Permittee must develop a written plan that outlines how chemical and microbiological field screening analysis will be conducted on the dry weather flows identified during the reconnaissance and screening efforts, including field screening methodologies and associated trigger thresholds used by the Permittee for determining follow-up action(s).

- 3.2.5.2 **Number of Outfalls to be Screened:** The Permittee must conduct visual dry weather screening of their MS4 outfalls, emphasizing those outfalls or portions of the MS4 that have not yet been inventoried or screened during the previous permit term.

Photos may be used to document and record the physical conditions associated with selected MS4 outfalls. If the individual MS4 outfall is dry (no flows or ponded runoff), the Permittee must also document and record such observations.

If the total number of MS4 outfalls in the Permit Area defined in Part 1.1 is less than 50, the Permittee must screen all outfalls at least annually.

If the total number of MS4 outfalls in the Permit Area defined in Part 1.1 is more than 50, the Permittee must screen a minimum of 50 outfalls annually.

- 3.2.5.3 **Monitoring of Illicit Discharges:** Where dry weather flows from the MS4 are identified by the Permittee, the Permittee must identify the source of such flows, and take appropriate action to eliminate the flows to the extent allowable pursuant to authority granted the Permittee under Idaho state law. At a minimum, the Permittee must conduct sampling of dry weather flows via grab samples of the discharge for in-field analysis and identification and may elect to use the following as indicator constituents: pH; total chlorine; detergents as surfactants; total phenols; *E. coli*; total phosphorus; turbidity; temperature; and suspended solids concentrations. Results of any field sampling must be compared to established trigger threshold levels and/or existing state water quality standards to direct appropriate follow-up actions by the Permittee in accordance with existing protocols and the ordinance/regulatory mechanism established by the Permittee.

- 3.2.5.4 **Maintain Records of Dry Weather Outfall Screening Program:** In each Annual Report, the Permittee must include a general summary of the results of dry weather screening program activities conducted over the preceding reporting period.

The Permittee must keep detailed records of its dry weather screening program activities conducted throughout the permit term, including the following information for each location:

- Time since last rain event; estimated quantity of last rain event;
- Site description (e.g., conveyance type, adjacent land uses); flow estimation (e.g., width of water surface, approximate depth of water, approximate flow velocity, flow rate);

- Visual observations (e.g., odor, color, clarity, floatables, deposits/stains, vegetation condition, structural condition, and biology);
- Results and documentation of any in-field sampling; recommendations for follow-up actions to address identified problems to the extent allowable pursuant to authority granted the individual Permittee under Idaho state law; and/or completed follow-up actions taken by the Permittee.

3.2.6 Follow-up

Within thirty (30) days of its detection, the Permittee must investigate recurring illicit discharges identified as a result of complaints or identified as a result of the dry weather screening investigations and sampling, to determine the source of such discharge.

The Permittee must take appropriate action to address and eliminate the source of an ongoing illicit discharge within sixty (60) days of its detection, to the extent allowable to the Permittee under Idaho state law.

- 3.2.6.1 For each MS4 outfall where the ongoing dry weather discharge is identified by the Permittee as being associated with irrigation return flows and/or groundwater seepage, "*appropriate action*" means, at a minimum, the Permittee must document in the next Annual Report the MS4 outfall location, and the facts supporting the Permittee's determination that the source is from either irrigation return flows or groundwater seepage. See also Permit Part 3.2.2.6.
- 3.2.6.2 As part of the Permit Renewal Application required by Part 8.2, the Permittee must include the complete list of all Permittee-identified MS4 outfall locations with ongoing dry weather flows associated with irrigation return flows and/or groundwater seepage.

3.2.7 Prevention and Response to Spills to the MS4

The Permittee must maintain written spill response procedures, and must coordinate their own spill prevention, containment, and response activities with the appropriate departments, programs, and agencies in the Permit Area to prevent spill related discharges from the MS4 to waters of the U.S. The Permittee must respond to, contain, and clean up any spill of sewage and other material that may discharge into the MS4 from any source (including private laterals and/or failing septic systems) in the Permit Area to the extent allowable pursuant to authority granted the individual Permittee under Idaho state law.

- 3.2.7.1 The Permittee must immediately report all spills of hazardous material, deleterious material, or petroleum products which may impact waters (ground and surface) of the State, as directed in Part 7.9 (*Twenty-Four Hour Notice of Noncompliance Reporting*) and Appendix A.2 (*Reporting of Discharges Containing Hazardous Materials or Deleterious Material*).²

3.2.8 Proper Disposal of Used Oil and Toxic Materials

The Permittee must coordinate with appropriate local entities to educate the Permittee's employees and members of the public of the proper management, disposal, or recycling of used oil, vehicle fluids, toxic materials, and other household hazardous wastes in the

² Part 3.2.7.1 is related to a condition of the IDEQ's *Final §401 Water Quality Certification for the City of Coeur d'Alene Municipal Separate Storm Sewer System; NPDES Permit # IDS028215*, dated July 1, 2020. See also Appendix A.2.

Permittee's jurisdiction.

3.2.9 Illicit Discharge Detection and Elimination Training for Staff

The Permittee must ensure that all persons responsible for investigating, identifying and eliminating illicit discharges and illicit connections into the MS4 are appropriately trained to conduct such activities. At a minimum, the Permittee's construction inspectors, maintenance field staff, and code compliance officers must be sufficiently trained to conduct dry weather screening activities and to respond to reports of illicit discharges and spills into the MS4.

The Permittee must provide orientation and training for new staff working on illicit discharge detection and elimination issues in the first six (6) months of employment.

If the Permittee utilizes outside parties to perform illicit discharge detection and elimination actions, outside staff must be appropriately trained to conduct such activities.

This training may be coordinated/combined with other Permittee staff education and training requirements in Parts 3.3.7 (*Construction Runoff Control Training for Staff*), 3.4.7 (*Permanent Stormwater Control Training for Staff*); and 3.5.10 (*Stormwater Pollution Prevention/Good Housekeeping Training for Staff*).

3.3 Construction Site Stormwater Runoff Control

3.3.1 Compliance Dates

No later than **April 3, 2025**, the Permittee must update its existing construction site stormwater runoff control requirements to enact SWMP control measure components in Parts 3.3.2 through 3.3.7 below.

- 3.3.1.1 If the Permittee seeks to comply with any SWMP control measure component, or combination of components, in this Part using one or more ACMs, the Permittee must submit a request in accordance with Part 2.6 (*Alternative Control Measure Requests*) no later than **October 1, 2022**.

3.3.2 Ordinance and/or other Regulatory Mechanism

Through ordinance or other regulatory mechanism to the extent allowable under Idaho state law, the Permittee must require erosion controls, sediment controls, and waste materials management controls to be used and maintained at construction projects from initial clearing through final stabilization.

To be considered adequate, the Permittee's regulatory mechanism must require construction site operators to maintain effective controls to reduce pollutants in stormwater discharges to the MS4 from sites in the Permittee's jurisdiction, as described in Part 3.3.3. The Permittee must require construction site operators to submit construction site plans for projects disturbing one or more acres for Permittee review, as described in Part 3.3.4. The Permittee must use inspections and enforcement actions (for example, written warnings, stop work orders and/or fines) to ensure compliance, as described in Part 3.3.5 below, and must maintain a written enforcement response policy, as described in Part 3.3.6.

- 3.3.2.1 **Compliance with Other NPDES Permit Requirements:** For construction projects in the Permittee's jurisdiction that disturb one or more acres (including projects that disturb less than one acre but are part of a common plan of development or sale that disturb one or more acres), the Permittee must refer construction site operators to obtain NPDES permit coverage under the current version of the Idaho CGP. See also Part 2.3 (*Stormwater Discharges Associated with Industrial or Construction Activity*).

3.3.3 Construction Site Runoff Control Specifications

The Permittee must require construction site operators to use erosion, sediment, and waste material management controls at construction project sites that result in land disturbance of greater than or equal to one (1) acre, including construction project sites less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more. The Permittee may define appropriate controls for different types and/or sizes of construction activity occurring in their jurisdiction.

The Permittee must maintain written specifications that address the proper installation and maintenance of such controls during all phases of construction activity occurring in their jurisdiction. The Permittee may adopt specifications created by another entity which complies with this Part. Construction site runoff control specifications must consist of:

- 3.3.3.1 Requirements for use of erosion control, sediment control, and waste materials management/pollution prevention practices that complement, and do not conflict with, the current version of the Idaho CGP;
- 3.3.3.2 Sizing criteria, performance criteria, illustrations, and design examples, as well as recommended operation and maintenance of each practice and guidance on selection and location of construction site runoff control practices; and
- 3.3.3.3 Specifications for long term operation and maintenance of such construction site runoff control practices to ensure that the control practices continue to perform as designed, including appropriate inspection interval and self-inspection checklists for use by the responsible party/construction site operator.

3.3.4 Preconstruction Site Plan Review

At a minimum, the Permittee must review preconstruction site plans from construction project site activity that will result in land disturbance of one (1) or more acres, including construction project site activity less than one acre that is part of a larger common plan of development or sale that would disturb one acre or more, using a checklist or similar process to determine compliance with the ordinance or other regulatory mechanism required by Part 3.3.2.

The Permittee must use individuals knowledgeable in the technical understanding of erosion, sediment, and waste material management controls to conduct such preconstruction site plan reviews.

Site plan review procedures must include consideration of the site's potential water quality impacts and must demonstrate compliance with the ordinance or other regulatory mechanism required by Part 3.3.2.

The Permittee must ensure that any preconstruction site plan contains site-specific measures that meet the Permittee's runoff control specifications as outlined in Part 3.3.3 above and includes any permanent stormwater management controls as outlined in Part 3.4.3 (*Permanent Stormwater Control Specifications*).

3.3.5 Construction Site Inspection and Enforcement

At a minimum, the Permittee must inspect construction sites in their jurisdiction that disturb one (1) or more acres, including construction project site activity less than one (1) acre that is part of a larger common plan of development or sale that disturbs one (1) or more acres, to ensure compliance with the Permittee's applicable requirements identified in this Part.

The Permittee must establish an inspection prioritization system to identify the minimum frequency and type of inspections, using such factors as project type, total area of disturbance, location, and potential threat to water quality. The Permittee must describe its construction site inspection prioritization system in the SWMP Document required by Part 2.5.3. In each Annual Report, the Permittee must summarize the nature and number of site inspections, follow-up actions, and any subsequent enforcement actions conducted during the relevant reporting period.

The Permittee must implement procedures for receipt and consideration of information submitted by the public.

Based on the findings of individual site inspections, the Permittee must take follow-up actions (i.e., re-inspection, enforcement) to ensure compliance with its applicable requirements.

Construction site inspections conducted by the Permittee, or its designated representative, must include, but not be limited to:

- 3.3.5.1 A review of the site plan to determine if the intended control measures were installed, implemented, and maintained;
- 3.3.5.2 An assessment of the site's compliance with the Permittee's ordinances/requirements, including the implementation and maintenance of required control measures;
- 3.3.5.3 Visual observation of any existing or potential non-stormwater discharges, illicit connections, and/or discharge of pollutants from the site, and recommendations to the site operator for follow-up if needed;
- 3.3.5.4 Education or instruction to the construction site operator related to additional stormwater pollution prevention practices, if needed; and
- 3.3.5.5 A written or electronic inspection report.

3.3.6 Enforcement Response Policy for Construction Site Runoff Control

The Permittee must develop, implement and maintain a written escalating enforcement response policy (ERP) or plan appropriate to its organization. The Permittee must submit the ERP for construction site runoff control to EPA and IDEQ with the Permit Renewal Application no later than **April 3, 2025**.

- 3.3.6.1 The ERP must address enforcement of construction site runoff controls for all construction projects in their jurisdiction, to the extent allowable under Idaho state law.
- 3.3.6.2 The ERP must describe the Permittee's potential response to violations with appropriate educational or enforcement responses. The ERP must address repeat violations through progressively stricter responses, as needed, to achieve compliance. The ERP must describe how the Permittee will use their available techniques to ensure compliance, such as: verbal warnings; written notices; escalated enforcement measures such as stop work orders, monetary penalties; and/or other escalating measures to the extent allowable under Idaho state law.

3.3.7 Construction Runoff Control Training for Staff

The Permittee must ensure that all persons responsible for preconstruction site plan review, site inspections, and enforcement of the Permittee's requirements are trained or otherwise qualified to conduct such activities.

The Permittee must provide training for new staff working on construction runoff control issues in the first six (6) months of employment.

If the Permittee utilizes outside parties to review plans and/or conduct inspections, outside staff must be trained or otherwise qualified to conduct such activities.

This training may be coordinated/combined with other Permittee staff education and training requirements in Parts 3.2.9 (*Illicit Discharge Detection and Elimination Training for Staff*); 3.4.7 (*Permanent Stormwater Control Training for Staff*); and 3.5.10 (*Stormwater Pollution Prevention/Good Housekeeping Training for Staff*).

3.4 Post-Construction Stormwater Management for New Development and Redevelopment

3.4.1 Compliance Dates

No later than **April 3, 2025**, the Permittee must update their existing controls to impose the required SWMP control measure components in Parts 3.4.2 through 3.4.7 below.

- 3.4.1.1 If the Permittee seeks to comply with any SWMP control measure component, or combination of components, in this Part using one or more ACMs, the Permittee must submit a request in accordance with Part 2.6 (*Alternative Control Measure Requests*) no later than **October 1, 2022**.

3.4.2 Ordinance and/or Other Regulatory Mechanism

Through an ordinance and/or regulatory mechanism, to the extent allowable under Idaho state law, the Permittee must require the installation and long-term maintenance of permanent stormwater controls at new development and redevelopment project sites in its jurisdiction that result in land disturbance of greater than or equal to one (1) acre (including construction project sites less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more) and that discharge into the MS4.

Required permanent stormwater controls must be sufficient to retain onsite the runoff volume produced from a 24-hour, 95th percentile storm event; or sufficient to provide the level of pollutant removal greater than pollutant removal expected by using onsite retention of runoff volume produced from a 24-hour, 95th percentile storm event.

- 3.4.2.1 **Treatment equivalent to the onsite stormwater design standard:** Using a continuous simulation hydrologic model or other comparable evaluation tool, the Permittee may establish stormwater treatment requirements which attain an equal or greater level of water quality benefits as onsite retention of stormwater discharges from new development and redevelopment sites. Such equivalent expressions of the onsite retention of the 95th percentile storm volume must be submitted to EPA as an ACM Request pursuant to Part 2.6.
- 3.4.2.2 **Alternatives for Local Compliance.** The Permittee's ordinance and/or regulatory mechanism may allow alternatives for project operators to comply with the Permittee's onsite retention requirement at a particular site based on factors of technical infeasibility, and/or site constraints. Such feasibility or constraint factors may include but are not limited to: shallow bedrock; high groundwater; groundwater contamination; soil instability as documented by a thorough geotechnical analysis; site/engineering-based conditions such as soils that do not allow for infiltration of the required volume of storm water runoff; and/or a land use that is inconsistent with capture, reuse and/or infiltration of stormwater.
- 3.4.2.3 **Plan Review and Approval:** The ordinance or other regulatory mechanism must include procedures for the Permittee's review and approval of permanent stormwater control plans for new development and redevelopment projects, consistent with Parts 3.3.4 (*Preconstruction Site Plan Review and Approval*) and 3.4.4 (*Permanent Controls Plan Review and Approval*).

3.4.3 Permanent Stormwater Controls Specifications

The Permittee must specify permanent stormwater controls for project sites in their

jurisdiction to install for sites that result in land disturbance of greater than or equal to one (1) acre (including construction project sites less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more) and that discharge into the MS4. The Permittee may define appropriate controls for different types and/or sizes of site development activity occurring in their jurisdiction.

The Permittee must develop, or update as necessary, any written specifications to address proper design, installation, and maintenance of required permanent stormwater controls. A Permittee may adopt specifications created by another entity that complies with this Part.

The written specifications must include:

- 3.4.3.1 **Specifications** for the use of site-based practices suitable to local soils and hydrologic conditions;
- 3.4.3.2 **Acceptable control practices**, including sizing criteria, performance criteria, illustrations, design examples, and guidance on selection and location of practices; and
- 3.4.3.3 **Specifications for proper long-term operation and maintenance**, including appropriate inspection interval and self-inspection checklists for responsible parties.

3.4.4 **Permanent Stormwater Controls Plan Review and Approval**

At a minimum, the Permittee must review and approve preconstruction plans for permanent stormwater controls at new development and redevelopment sites that result in land disturbance of greater than or equal to one (1) acre (including construction project sites less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more) and that discharge into the MS4. The Permittee must review plans for consistency with the ordinance/regulatory mechanism and specifications required by this Part. The Permittee must not approve or recommend for approval any plans for permanent controls that do not meet minimum requirements specified in their written specifications.

The Permittee must use individuals knowledgeable in the technical understanding of permanent stormwater controls to conduct such plan reviews.

3.4.5 **Permanent Stormwater Controls Inspection and Enforcement**

The Permittee must inspect high priority permanent stormwater controls at new development and redevelopment sites that result in land disturbance of greater than or equal to one (1) acre (including construction project sites less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more) and that discharge into the MS4. The purpose of such inspections is to ensure proper installation, and long-term operation and maintenance, of such controls.

The Permittee must establish an inspection prioritization system to identify sites for inspections of permanent control installation and operation. Factors to consider when establishing priority regarding where, and when, inspections occur must include, but are not limited to: size of new development or redevelopment drainage area; potential to discharge to portions of the MS4 discharging to impaired waters; sensitivity, and/or impairment status of receiving water(s); and history of non-compliance at the site during the construction phase.

- 3.4.5.1 **Inspect High Priority Locations:** At a minimum, the Permittee must identify permanent stormwater controls at new development and redevelopment sites that result from land disturbance of at least one (1) or more acres as "high

priority”, and schedule associated inspections to occur at least once annually. The inspections must determine whether permanent stormwater management or treatment practices have been properly installed (i.e., an “as built” verification). At appropriate intervals determined by the Permittee and established in compliance with Part 3.4.6 below, scheduled inspections must evaluate the ongoing operation and maintenance of such practices, identify deficiencies, and identify potential solutions to reduce negative water quality impacts to receiving waters. The Permittee must use inspection checklists and maintain records of actions taken in response to inspections of permanent stormwater controls at high priority new development and redevelopment sites.

- 3.4.5.2 **Enforce Requirements:** The Permittee must develop and implement an enforcement response policy (ERP) similar to that required in Part 3.3.6 (*Enforcement Response Policy for Construction Site Runoff Control*) sufficient to ensure and maintain the functional integrity of permanent stormwater controls in their jurisdiction. The Permittee must submit the ERP for permanent stormwater controls to EPA and IDEQ with the Permit Renewal Application no later than **April 3, 2025**.

3.4.6 **Operation and Maintenance (O&M) of Permanent Stormwater Controls**

The Permittee must maintain a database inventory to track and manage the operational condition of permanent stormwater controls in its jurisdiction. All available data on existing permanent controls known to the Permittee must be included in the database inventory. At a minimum, the Permittee must begin tracking at the time the Permittee takes ownership, using a database that incorporates geographic information system (GIS) information and/or developed in conjunction with the MS4 Map required in Part 3.2.2 (*MS4 Map and Outfall Inventory*). The tracking system must also include reference to the type and number of permanent stormwater controls; O&M requirements; activity and schedule; responsible party; and any applicable self-inspection schedule.

- 3.4.6.1 **O&M Agreements:** Where parties other than the Permittee are responsible for the O&M of permanent stormwater controls, the Permittee should require a legally enforceable and transferable O&M agreement with the responsible party, or other mechanism, that assigns permanent responsibility for maintenance of such permanent stormwater control practices.

3.4.7 **Permanent Stormwater Controls Training For Staff**

The Permittee must ensure that all persons responsible for reviewing site plans for permanent stormwater controls, and/or for inspecting the installation and operation of permanent stormwater controls, are trained or otherwise qualified to conduct such activities.

The Permittee must provide training for new staff working on permanent stormwater control issues in the first six (6) months of employment.

If the Permittee utilizes outside parties to review plans and/or conduct inspections, outside staff must be trained or otherwise qualified to conduct such activities.

This training may be coordinated/combined with other Permittee staff education and training requirements in Parts 3.2.9 (*Illicit Discharge Detection and Elimination Training for Staff*); 3.3.7 (*Construction Runoff Control Training for Staff*); and 3.5.10 (*Stormwater Pollution Prevention/Good Housekeeping Training for Staff*).

3.5 Pollution Prevention/Good Housekeeping for MS4 Operations

The Permittee must properly operate and maintain the MS4 and its facilities, using prudent pollution prevention and good housekeeping as required by this Part, to reduce the discharge of pollutants through the MS4.

3.5.1 Compliance Dates

No later than **April 3, 2025**, the Permittee must ensure that their stormwater infrastructure and management program includes the required SWMP control measure components described in Parts 3.5.2 through 3.5.10 below.

- 3.5.1.1 If the Permittee seeks to comply with any SWMP control measure component, or combination of components, in this Part using one or more ACMs, the Permittee must submit a request in accordance with Part 2.6 (*Alternative Control Measure Requests*) no later than **October 1, 2022**.

3.5.2 Inspection and Cleaning of Catch Basins and Inlets

The Permittee must inspect all Permittee-owned or operated catch basins and inlets in the MS4 at least once every five years and take all appropriate maintenance or cleaning action based on those inspections to ensure the catch basins and inlets continue to function as designed.

The Permittee may establish a catch basin inspection prioritization system, and establish alternate inspection frequency, provided the Permittee describes all relevant factors used to target such inspections to specific areas of the MS4 in the SWMP Document required by Part 2.5.3. Material removed from MS4 catch basins and inlets must be managed in accordance with Part 7.13 (*Removed Substances*). Records reflecting catch basin and inlet inspection, and material removal/cleaning, must be maintained by the Permittee, and the actions taken during the latest reporting period must be summarized in each Annual Report.

3.5.3 Operation and Maintenance Procedures for Streets, Roads, Highways and Parking Lots

Where the Permittee is responsible for the O&M of streets, roads, highways, and/or parking lots, the Permittee must ensure those procedures are conducted in a manner to protect water quality and reduce the discharge of pollutants through the MS4.

- 3.5.3.1 At a minimum, O&M procedures must include: practices to reduce road and parking lot debris/pollutants from entering the MS4; practices related to road deicing, anti-icing, and snow removal; operation of snow disposal areas; storage areas for street/road traction material (e.g. salt, sand, or other chemicals); and the long-term O&M of permanent stormwater control measures associated with the Permittee's streets, roads, highways, and parking lots.
- 3.5.3.2 For each type of maintenance activity, practice, or facility, the Permittee must establish specific schedules for inspection and maintenance, and appropriate pollution prevention/good housekeeping actions.
- 3.5.3.3 Where site conditions allow, the Permittee must consider and utilize water conservation measures for all landscaped areas as part of these updated O&M

procedures to prevent landscape irrigation water from discharging through the MS4.

3.5.4 Inventory and Management of Street/Road Maintenance Materials

Where the Permittee is responsible for the O&M of streets, roads, highways, and/or parking lots, the Permittee must reduce pollutants in discharges to the MS4 and waters of the U.S. from street/road maintenance material storage stockpiles (such as sand, salt, and/or sand with salt stockpiles).

The Permittee must maintain an inventory of street /road maintenance materials stored at locations within the Permit Area that drain to the MS4. The Permittee must assess the physical adequacy of each Material Storage Location to prevent potential adverse water quality impacts and must make any structural or nonstructural improvements as necessary to eliminate any such impacts.

No later than **April 3, 2025**, the Permittee must include in the SWMP Document a complete description of all Material Storage Locations in the Permit Area that drain to the MS4. The description of each Material Storage Location must, at a minimum, include a narrative of the individual location, an estimated average annual quantity of materials stored at the location; a short description of how/where the Permittee typically uses the material(s) in its jurisdiction; and a summary description of any structural or non-structural controls used by the Permittee to prevent pollutants at material storage locations from discharging to the MS4 and to waters of the U.S.

3.5.5 Street, Road, Highway, and Parking Lot Sweeping

Where the Permittee is responsible for the O&M of streets, roads, highways, and/or parking lots, the Permittee must sweep those areas that discharge to the MS4 at least once annually.

No later than **April 3, 2025**, the Permittee must include in the SWMP Document a written description of its sweeping management plan. The sweeping management plan must include:

- 3.5.5.1 An inventory and/or map of all streets, roads, highways and public parking lots owned, operated, or maintained by the Permittee in the Permit Area that discharge to the MS4 or directly to waters of the U.S., and identify their selected sweeping frequency;
- 3.5.5.2 A discussion of any areas where sweeping is technically infeasible; for such areas, the Permittee must document the reasons why sweeping in the particular area of their jurisdiction served by the MS4 is infeasible, and describe any alternative means the Permittee uses to minimize pollutant discharges from these areas into the MS4 and into any adjacent waters of the U.S.;
- 3.5.5.3 An overall description of their street sweeping activities to minimize pollutant discharges into the MS4 and receiving water; including the types of sweepers used, number of swept curb and/or lane miles; general schedule or dates of sweeping by location and frequency category; volume or weight of materials removed; and any public outreach efforts or other means to address areas that are infeasible to sweep.

3.5.6 O&M Procedures for Other Municipal Areas and Activities

The Permittee must conduct its municipal O&M activities in a manner that reduces the discharge of pollutants through the MS4 to protect water quality. The Permittee must review, and update as necessary, existing procedures for inspection and maintenance schedules to

ensure pollution prevention and good housekeeping practices are conducted for the following activities:

- grounds/park and open space maintenance;
- fleet maintenance and vehicle washing operations;
- building maintenance;
- snow management and snow disposal site O&M;
- solid waste transfer activities;
- municipal golf course maintenance;
- materials storage;
- heavy equipment storage areas;
- hazardous materials storage;
- used oil recycling; and
- spill control and prevention measures for municipal refueling facilities.

3.5.7 Requirements for Pesticide, Herbicide, and Fertilizer Applications

The Permittee must implement practices to reduce the discharge of pollutants to the MS4 associated with the Permittee's application and storage of pesticides, herbicides and fertilizers in the Permit Area. At a minimum, such areas include the Permittee's public rights-of-way, parks, recreational facilities, golf courses, and/or landscaped areas. All employees or contractors of the Permittee applying pesticides must follow all label requirements, including those regarding application methods, rates, number of applications allowed, and disposal of the pesticide/herbicide/fertilizer and rinsate.

3.5.8 Stormwater Pollution Prevention Plans (SWPPPs) for Permittee Facilities

The Permittee must develop and implement site-specific SWPPPs to manage stormwater discharges from all Permittee-owned material storage facilities, heavy equipment storage areas, and maintenance yards identified in the inventory required by Part 3.2.2 (*MS4 Map and Outfall Inventory*). Permittee-owned facilities discharging stormwater associated with industrial activity, as defined in 40 CFR §122.26(b)(14), must obtain separate NPDES permit coverage pursuant to Part 1.3.3 (*Stormwater Discharges Associated with Industrial or Construction Activity*).

3.5.9 Litter Control

Throughout the Permit term, the Permittee must implement methods to reduce litter in its jurisdiction. The Permittee must work cooperatively with others to control litter on a regular basis, and after major public events, in order to reduce the discharge of pollutants to the MS4.

3.5.10 Stormwater Pollution Prevention/Good Housekeeping Training for Staff

The Permittee must ensure that all persons responsible for the stormwater infrastructure management and O&M activities as required by this Part are trained or otherwise qualified to conduct such activities.

The Permittee must provide training for new staff working on infrastructure management and O&M activities as required by this Part in the first six (6) months of employment.

If the Permittee utilizes outside parties to perform infrastructure management and O&M activities as required by this Part, outside staff must be trained or otherwise qualified to conduct such activities.

This training may be coordinated/combined with other Permittee staff education and training requirements in Parts 3.2.9 (*Illicit Discharge Detection and Elimination Training for Staff*); 3.3.7 (*Construction Runoff Control Training for Staff*); and 3.4.7 (*Permanent Stormwater Control Training for Staff*).

4 SPECIAL CONDITIONS FOR DISCHARGES TO IMPAIRED WATERS

4.1 General Requirements

The Permittee must conduct quantitative monitoring/assessment and pollutant reduction activities designed to assess and control impairment pollutants in their MS4 discharges to the Spokane River and Coeur d'Alene Lake.

4.1.1 Submit Documents

No later than **October 1, 2022**, and pursuant to Part 2.6 (*Alternative Control Measure Requests*) the Permittee must submit the Monitoring/Assessment Plan and the description of Pollutant Reduction Activities specified in Parts 4.2 and 4.3 below.

EPA will review the materials submitted and, as necessary, propose to modify this Permit to incorporate by reference the specific monitoring/assessment and pollutant reduction activities. See Part 2.6.4 (*Recognition of ACMs*).

4.1.2 SWMP Document

No later than **December 1, 2022**, the Permittee must update their SWMP Document required in Part 2.5.3 to describe their intended means of accomplishing these requirements, including any associated implementation date(s).

4.1.3 Reporting Requirements

Upon EPA's written notification pursuant to Part 2.6.4 (*Recognition of ACMs*) the Permittee must thereafter document in each Annual Report their progress on conducting the specified monitoring/assessment and pollutant reduction activities. See also Part 6.4 (*Reporting Requirements*).

No later than **April 3, 2025**, the Permittee must submit final reports summarizing the Monitoring/Assessment information and Pollutant Reduction Activities conducted to date. Such final reports must be submitted with its Permit Renewal Application required by Part 8.2 (*Duty to Reapply*).

4.2 Monitoring/Assessment Activities

The Permittee must submit a Monitoring/Assessment Plan that is designed to quantify, at a minimum, pollutant loadings from the MS4 into waterbodies listed in Table 4.2 below. The Monitoring/Assessment Plan must address all required plan elements outlined in Part 6.2 (*General Requirements for Monitoring/Assessment Activities*).

Table 4.2: Minimum Monitoring/Assessment Expectations

Location(s)	Pollutant Parameter ³	Frequency
Coeur d'Alene MS4 Discharges into Spokane River	Lead, Zinc, Total Phosphorus	At least four (4) samples during a calendar year
Coeur d'Alene MS4 Discharges into Coeur d'Alene Lake	Cadmium, Lead, Zinc, Total Phosphorus	

³ Note: Limiting the discharge of nutrients such as Total Phosphorus controls the release of metals from lake sediments. See: Coeur d'Alene Lake Management Plan (2009) at: <https://www.deq.idaho.gov/regional-offices-issues/coeur-dalene/coeur-dalene-lake-management/>

4.3 Pollutant Reduction Activities

The Permittee must define and implement at least one (1) pollutant reduction activity designed to reduce lead, zinc, and total phosphorus loadings from the MS4 into the Spokane River ⁴

The Permittee must define and implement at least one (1) pollutant reduction activity designed to reduce lead, zinc, cadmium, and total phosphorus loadings from the MS4 into Coeur d'Alene Lake.⁴

When choosing pollutant reduction activities, the Permittee must also consider that other pollutants, such as polychlorinated biphenyls (PCBs), are causing impairments to the Spokane River downstream of the ID/WA border. The Permittee must prioritize the implementation of the selected activities in MS4 areas/locations based on consideration of relevant and available information such as: EPA-approved TMDLs (See Table 4.3); previously collected monitoring data for nutrients, metals, and/or sediment/siltation; cleanup activities at sites with PCBs identified as a contaminant; and/or available relevant local inspection or compliance records.

In the final report required by Part 4.1.3 above, the Permittee must quantify the estimated pollutant reduction accomplished resulting from such activities.

Table 4.3 Receiving Water Impairments

<i>Waterbody/Assessment Unit/Description</i>	<i>Impairment Pollutants</i>
Spokane River <i>ID17010305PN004_04 / Spokane River - Coeur d'Alene Lake to Post Falls Dam</i>	<i>Lead, Zinc, Total Phosphorus</i>
Spokane River - WA portion downstream of <i>Idaho/Washington border</i>	<i>Polychlorinated Biphenyls</i>
Coeur d'Alene Lake <i>ID17010303PN001L_0L / Coeur d'Alene Lake</i>	<i>Cadmium, Lead, Zinc, Total Phosphorus</i>

⁴These provisions reflect a condition of the IDEQ's *Final §401 Water Quality Certification for the City of Coeur d'Alene Municipal Separate Storm Sewer System; NPDES Permit # IDS028215*, dated July 1, 2020.

5 REQUIRED RESPONSE TO EXCURSIONS ABOVE IDAHO WATER QUALITY STANDARDS

The Permittee will be presumed to be in compliance with applicable Idaho Water Quality Standards if the Permittee is in compliance with the terms and conditions of this Permit. If the Permittee, EPA, and/or IDEQ determines that the discharge from the MS4 causes or contributes to an excursion above the Idaho Water Quality Standards, then the Permittee remains in compliance with this Permit as long as the Permittee implements all applicable SWMP control measures required by this Permit and undertakes the following actions:

5.1 Notification

The Permittee must notify EPA and IDEQ in writing at the addresses listed in Appendix A.1 within 30 days of becoming aware that, based on credible site-specific information, a discharge from the Permittee's MS4 is causing or contributing to a known or likely excursion above the Idaho Water Quality Standards.

Written notification under this Part must, at a minimum, identify the source of the site-specific information; describe the location, nature, and extent of the known or likely water quality standard excursion in the receiving water; and explain the reasons why the MS4 discharge is believed to be causing or contributing to the problem. For on-going or continuing excursions, a single written notification provided to both EPA and IDEQ will fulfill this requirement.

Nothing in this Part precludes any notification required by Part 7.9 (*24-hour Notice of Non-Compliance Reporting*), the institution of any legal action, or relieves the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state/Tribal law or regulation under authority preserved by Section 510 of the CWA. No condition of the Permit releases the Permittee from any responsibility or requirements under other environmental statutes or regulations.

5.1.1 EPA Response

Based on a notification provided under this Part or through any other means, EPA may notify the Permittee, in writing, that an adaptive management response is required if EPA and IDEQ determine that a discharge from the Permittee's MS4 is causing or contributing to an excursion above the Idaho Water Quality Standards in a receiving water.

- 5.1.1.1 EPA and IDEQ may elect not to require an adaptive management response from the Permittee if EPA and IDEQ determine that the excursion of Idaho Water Quality Standards is already being addressed by a TMDL implementation plan or other enforceable water quality cleanup plan; or if EPA and IDEQ conclude the Permittee's contribution to the excursion will be eliminated through implementation of other permit requirements, regulatory requirements, or Permittee actions.

5.2 Adaptive Management Report

Within 60 days of receiving a response from EPA and IDEQ under Part 5.1.1, or by an alternative date established by EPA, the Permittee must review its Stormwater Management Program and submit a report to EPA and IDEQ. The Adaptive Management Report must include:

5.2.1 Existing BMPs

A description of the operational and/or structural BMPs that are currently being implemented at the location to prevent or reduce any pollutants that are causing or contributing to the violation of water quality standards, including a qualitative assessment of the effectiveness of

each BMP.

5.2.2 Potential BMPs

A description of potential additional operational and/or structural BMPs that will or may be implemented in order to prevent or reduce any pollutants that are causing or contributing to the violation of water quality standards.

5.2.3 Monitoring/Assessment

A description of the potential monitoring or other assessment and evaluation efforts that will or may be implemented to monitor, assess, or evaluate the effectiveness of the additional BMPs.

5.2.4 Schedule

A schedule for implementing the additional BMPs including, as appropriate: funding, training, purchasing, construction, monitoring, and other assessment and evaluation components of implementation.

5.3 Review and Approval of Adaptive Management Report

EPA and IDEQ will, in writing, acknowledge receipt of the Adaptive Management Response Report within a reasonable time and will notify the Permittee when it expects to complete its review of the report. EPA, in consultation with IDEQ, will either approve the additional BMPs and implementation schedule, or require the Permittee to modify the report as needed. If modifications to the Adaptive Management Report are required, EPA and IDEQ will specify a time frame in which the Permittee must submit the revised Report for EPA and IDEQ review.

5.4 Implementation

The Permittee must begin implementation of any additional BMPs pursuant to the schedule approved by EPA and IDEQ immediately upon receipt of EPA's written notification of approval.

5.5 Reporting

The Permittee must include with each subsequent Annual Report a summary of the status of implementation and the results of any monitoring, assessment, or evaluation efforts conducted during the reporting period to assess progress towards addressing the original water quality excursion. A final summary of such adaptive management efforts must be included with the Permit Renewal Application required by Part 8.2.

5.6 Permit Revision

EPA will determine, based on the Adaptive Management Report, whether additional permit terms and conditions specific to the Permittee must be added to this Permit. If new or specific permit conditions are warranted, EPA will notify the Permittee and the public of its intent to propose additional requirements affecting the Permittee and will accept public comment for a minimum of 30 days on any proposed revisions, pursuant to 40 CFR §§ 122.62 and 124.

6 MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

6.1 Compliance Evaluation

At least once per year, the Permittee must evaluate their compliance with the requirements of this Permit. This self-evaluation includes assessment of progress toward implementing the SWMP control measures in Part 3, and implementation of individual or collective actions to comply with any additional requirements identified pursuant to Part 4 (*Special Conditions For Discharges To Impaired Waters*). The Permittee may document this self-evaluation using the optional Annual Report format provided in Appendix B.

6.2 General Requirements for Monitoring/Assessment Activities

The Permittee must conduct any monitoring and/or assessment actions described in Part 4 consistent with this Part.

6.2.1 Optional Cooperative Monitoring/Assessment

The Permittee may cooperate or contract with others to conduct any of the required monitoring/assessment activities specified herein.

If the Permittee chooses to participate in cooperative monitoring/assessment efforts, the Permittee must notify EPA and IDEQ of the intended arrangement in the Alternative Control Measure Request required by Part 2.6.2 (*Actions to Address Discharges to Impaired Waters*) and submit a joint Monitoring/Assessment Plan as specified in Part 6.2.2 below.

6.2.2 Monitoring/Assessment Plan and Objectives

No later than **October 1, 2022**, the Permittee must develop and submit a Monitoring/Assessment Plan designed to address the monitoring/assessment activity specified in Part 4.2 and the quality assurance (QA) objectives defined in Part 6.2.7 below. Any existing Monitoring/Assessment Plan(s) may be modified to comply with this Part. The Permittee must submit the complete Monitoring/Assessment Plan as an ACM Request. See Part 2.6.2 (*Actions to Address Discharges to Impaired Waters*).

- 6.2.2.1 EPA will review the Permittee's ACM Request and, as necessary, propose to revise this Permit to incorporate by reference the Permittee's specific monitoring/assessment and pollutant reduction activities.

The Permittee must begin implementation of their identified monitoring/assessment activities no later than 30 days following EPA's written notice that the Permit has been revised to incorporate their activities, pursuant to Part 2.6.4 (*Recognition of Alternative Control Measures*).

6.2.3 Representative Sampling

Samples, measurements and/or assessments conducted in compliance with this Permit must be representative of the nature of the monitored discharge or activity.

6.2.4 Additional Monitoring

If the Permittee quantitatively monitors and/or assesses pollutants in their MS4 discharges more frequently, or in more locations, than specified in the Monitoring/Assessment Plan named in this Permit, the results of any additional monitoring must be included with other data submitted to EPA and IDEQ as required in Part 6.4.3 (*Monitoring/Assessment Report*).

6.2.5 Wet Weather Discharge Monitoring

If the Permittee monitors wet weather discharges from MS4 outfalls:

- 6.2.5.1 **Location.** The locations of such monitoring must be identified in the Monitoring/Assessment Plan required by Part 4 (*Special Conditions for Discharges to Impaired Waters*).
- 6.2.5.2 **Sample Type.** The sample collection must be identified in the Monitoring/Assessment Plan required by Part 4 (*Special Conditions for Discharges to Impaired Waters*.)
- 6.2.5.3 **Parameters.** The pollutants to be sampled must be identified in the Monitoring/Assessment Plan required by Part 4 (*Special Conditions for Discharges to Impaired Waters*.)
- 6.2.5.4 **Frequency.** The samples must be collected at least four (4) times per year, or at a greater frequency identified in the Monitoring/Assessment Plan required by Part 4 (*Special Conditions for Discharges to Impaired Waters*). At least one sample each calendar year must be collected in the September - October period.
- 6.2.5.5 **QA Requirements.** The Permittee must develop a Quality Assurance Project Plan (QAPP), or revise an existing QAPP, as required by Part 6.2.6 (*Quality Assurance Requirements*) to clearly identify all methods and protocols to be used in the wet weather sampling effort.
- 6.2.5.6 **Reporting.** The Permittee must submit all data collected to EPA as required in Part 6.4.2 (*Annual Report*).

6.2.6 Polychlorinated Biphenyls (PCB) Monitoring

If the Permittee chooses to monitor/assess for PCBs in MS4 catch basin sediment solids, the Permittee must collect and analyze samples from at least two locations using EPA Method 8082 and a quantitation level for total PCBs no greater than 10 µg/kg dry weight.

6.2.7 Quality Assurance Requirements

The Permittee must develop a Quality Assurance Project Plan (QAPP) for any monitoring or quantitative assessment activities conducted in compliance with this Permit. Any existing QAPP may be modified to meet the requirements of this Part.

- 6.2.7.1 **QAPP Content:** The QAPP must be designed to assist the Permittee in planning for the collection and analysis of any stormwater discharge, receiving water quality, catch basin sediments, and/or other types of information collected in compliance with this Permit, and in explaining data anomalies when they occur.

At a minimum, the QAPP must reflect the content specified in EPA documents listed in Part 6.2.7.1.6 below, including:

- 6.2.7.1.1 Details on the number of samples, identified sampling locations, type of sample containers, preservation of samples, holding times, analytical detection and quantitation limits for each target compound, analytical methods, type and number of quality assurance field samples, precision and accuracy requirements, sample preparation requirements, sample shipping methods, and laboratory data delivery requirements;

- 6.2.7.1.2 A map with GPS coordinates indicating the location of each monitoring point;
- 6.2.7.1.3 Qualifications and training of all personnel involved with water quality and discharge sampling;
- 6.2.7.1.4 Specifications for the collection and analysis of quality assurance samples for each sampling event, including matrix spiked and duplicate samples and analysis of field transfer blanks (sample blanks); and,
- 6.2.7.1.5 Name(s), address(es), and telephone number(s) of the laboratories used by, or proposed to be used by, the Permittee.
- 6.2.7.1.6 **QAPP Procedures:** Throughout all sample collection and analysis activities, the Permittee must use EPA-approved and chain-of-custody procedures described in *Requirements for Quality Assurance Project Plans* (EPA/QA/R-5) and *Guidance for Quality Assurance Project Plans* (EPA/QA/G-5). Copies of these documents can be found at <http://www.epa.gov/quality/qs-docs/q5-final.pdf>

6.2.7.2 QAPP Updates and Availability

- 6.2.7.2.1 The Permittee must amend and update the QAPP whenever there is a modification in sample collection, sample analysis, or other procedure addressed by the QAPP.
- 6.2.7.2.2 Copies of the QAPP must be maintained by the Permittee as part the Monitoring/Assessment Plan, updated as necessary, and made available to EPA and/or IDEQ upon request.

6.2.8 Analytical Methods

Sample collection, preservation, and analysis must be conducted according to sufficiently sensitive methods/test procedures approved under 40 CFR §136, unless otherwise approved by EPA, unless another method is required under 40 CFR subchapters N or O, or other test procedures have been specified in this Permit and/or approved by EPA as an alternative test procedure under 40 CFR §136.5. Where an approved 40 CFR § 136 method does not exist, and other test procedures have not been specified, any available method may be used after approval from EPA.

The Permittee must use sufficiently sensitive analytical methods as follows:

- 6.2.8.1 Permittee must use a method that detects and quantifies the level of the pollutant, or
- 6.2.8.2 Permittee must use a method that can achieve a maximum Minimum Level (ML) less than or equal to those specified in Table 6.2.8 below;
- 6.2.8.3 Permittee may request different MLs. The request must be in writing and must be approved by EPA.

Table 6.2.8: Minimum Levels

Pollutant & CAS No. (if available)	Minimum Level in µg/L, unless otherwise specified
Total Ammonia (as N)	50

Pollutant & CAS No. (if available)	Minimum Level in µg/L, unless otherwise specified
Cadmium, Total (7440-43-9)	0.1
Copper, Total (7440-50-8)	2.0
Dissolved oxygen	0.2 mg/L
Total Hardness	200 as CaCO ₃
Lead, Total (7439-92-1)	0.16
Nitrate + Nitrite Nitrogen (as N)	100
Oil and Grease (HEM) (Hexane Extractable Material)	5,000
Soluble Reactive Phosphorus (as P)	10
Phosphorus, Total (as P)	10
Temperature	0.2° C
Total Suspended Solids	5 mg/L
Zinc, Total (7440-66-6)	2.5

6.3 Recordkeeping

6.3.1 Retention of Records

The Permittee must retain records and information documenting implementation of all control measures required by this Permit (including a copy of this Permit and all Annual Reports) for a period of at least five years from the date of the report, sample, or measurement, or for the term of this Permit, whichever is longer. This period may be extended at the request of EPA or IDEQ at any time.

Information and records includes, but is not limited to, records of all data or information used to develop and implement the SWMP control measures and/or used to complete the application for this Permit; such material may include inspection and maintenance records; all monitoring, calibration, and monitoring equipment maintenance records; all original strip chart recordings for any continuous monitoring instrumentation; copies of reports required by this Permit; etc.

6.3.2 Availability of Records

At a minimum, the Permittee must retain all records associated with this Permit in a location and format that are accessible to EPA and IDEQ. The Permittee must make all records described above available to the public if requested to do so in writing. The public must be able to view the records during normal business hours. The Permittee may charge the public a reasonable fee for copying requests.

The Permittee must submit the records referred to in Part 6.3.1 above to EPA and IDEQ when such information is requested.

6.4 Reporting Requirements

At a minimum, the Permittee must submit reports and/or documents required by this Permit to EPA and IDEQ in an electronic portable document format (PDF) that is saved and stored on a compact disc or other portable electronic storage device.

All submittals must be sent to the Addresses in Appendix A.

6.4.1 Electronic Copy Submissions using NetDMR

Prior to the Permit expiration date, EPA may provide the Permittee with instructions for submitting required Annual Reports and/or other documents electronically using NetDMR. The Permittee may then use NetDMR for this Permit only after requesting and receiving permission from EPA Region 10. After a Permittee begins using NetDMR, the Permittee is no longer required to submit such materials to EPA and IDEQ via U.S. Postal Mail.

6.4.2 Annual Report

No later than **December 1** of each year beginning in **Calendar Year 2021** the Permittee must submit an Annual Report to EPA and IDEQ. EPA recommends the Permittee use the Annual Report Format provided in Appendix B.

- 6.4.2.1 The reporting period for the Year 1 Annual Report will be from **December 1, 2020 – September 30, 2021**. Reporting periods for subsequent Annual Reports are specified in Table 6.4.2 below.

Table 6.4.2 Annual Report Deadlines*		
	Reporting Period	Due Date
Year 1 Annual Report	December 1, 2020 – September 30, 2021	December 1, 2021
Year 2 Annual Report	October 1, 2021 – September 30, 2022	December 1, 2022
Year 3 Annual Report	October 1, 2022 –September 30, 2023	December 1, 2023
Year 4 Annual Report	October 1, 2023 –September 30, 2022	December 1, 2024
Year 5 Annual Report	October 1, 2024 –September 30, 2025	September 30, 2025

- 6.4.2.2 EPA recommends the Permittee use the Annual Report Format provided in Appendix B. The Annual Report must reflect the status of the Permittee's implementation of the Permit requirements during the relevant reporting period, and must include:
- 6.4.2.2.1 Any summaries, descriptions, and/or other information the Permittee uses to demonstrate compliance with the Permit during the relevant reporting period.
 - 6.4.2.2.2 A current website address where the Permittee's SWMP Document is available as an electronic portable data format (PDF) document;
 - 6.4.2.2.3 If applicable, notification to EPA and IDEQ that the Permittee is relying on another Permittee or outside entity to satisfy any obligations under this Permit;
 - 6.4.2.2.4 Notification of any annexations, incorporations, or jurisdictional boundary changes resulting in an increase or decrease in the Permittee's area of responsibility during the reporting period; and
 - 6.4.2.2.5 Point(s) of contact responsible SWMP implementation for the Permittee, and for authorization, certification, and signature pursuant to Part 8.5 (*Signatory Requirements*).
- 6.4.2.3 The Permittee must make a copy of each Annual Report (including any required attachments) available to the public through the Permittee-maintained website required by Part 3.1.8 (*Publicly Accessible Website*).

6.4.3 **Monitoring/Assessment Report**

The Permittee must submit a final report summarizing any/all monitoring/assessment data collected during the permit term as an attachment to the Permit Renewal Application required by Part 8.2 no later than **April 3, 2025**. All Final Monitoring/Assessment Reports must summarize and evaluate the information collected, and include reference to:

- 6.4.3.1 the date, exact place, and time of sampling or measurements;
- 6.4.3.2 the name(s) of the individual(s) who performed the sampling or measurements;
- 6.4.3.3 the date(s) analyses were performed;
- 6.4.3.4 the names of the individual(s) who performed the analyses; the analytical techniques or methods used; and
- 6.4.3.5 the results of such analyses, including both visual and narrative summary interpretation of the data collected, a discussion of any quality assurance issues, and a narrative discussion comparing data collected to any previously collected or historical information, as appropriate. Raw monitoring data must be submitted in a spreadsheet or text-format electronic file.

6.4.4 **Pollutant Reduction Activity Report**

The Permittee must submit a Pollutant Reduction Activity Report summarizing actions conducted during the Permit term to reduce pollutant loadings from the Permittee's MS4. The Pollutant Reduction Activity Report must be submitted as an attachment to the Permit Renewal Application required by Part 8.2 no later than **April 3, 2025**. The final Pollutant Reduction Activity Report must summarize the actions identified in Part 4 and must quantify any load reductions accomplished to date.

6.5 **Addresses**

Any reports or submittals required by this Permit must be sent to the Addresses listed in Appendix A.

7 COMPLIANCE RESPONSIBILITIES

7.1 Duty to Comply

The Permittee must comply with all conditions of this Permit. Any permit noncompliance constitutes a violation of the CWA and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

7.2 Penalties for Violations of Permit Conditions

7.2.1 Civil and Administrative Penalties

Pursuant to 40 CFR §19 and the CWA, any person who violates sections 301, 302, 306, 307, 308, 318 or 405 of the CWA, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the CWA, is subject to a civil penalty not to exceed the maximum amounts authorized in the United States Code (USC) by section 309(d) of the CWA and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently \$55,800 per day for each violation).

7.2.1.1 **Administrative Penalties:** Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Pursuant to 40 CFR §19 and the Act, administrative penalties for Class I violations are not to exceed the maximum amounts authorized by section 309(g)(2)(A) of the CWA and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) [currently \$22,320 per day for each violation, with the maximum amount of any Class I penalty assessed not to exceed \$55,800]. Pursuant to 40 CFR §19 and the Act, penalties for Class II violations are not to exceed the maximum amounts authorized by section 309(g)(2)(B) of the CWA and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) [currently \$22,320 per day for each violation, with the maximum amount of any Class II penalty not to exceed \$278,995].

7.2.1.2 Criminal Penalties:

7.2.1.2.1 Negligent Violations.

The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both.

7.2.1.2.2 Knowing Violations.

Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.

7.2.1.2.3 **Knowing Endangerment.**

Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

7.2.1.2.4 **False Statements.**

The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both. The CWA further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

7.3 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.

7.4 Duty to Mitigate

The Permittee must take all reasonable steps to minimize or prevent any discharge or disposal in violation of this Permit that has a reasonable likelihood of adversely affecting human health or the environment.

7.5 Proper Operation and Maintenance

The Permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance also includes BMPs, adequate laboratory controls, and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this Permit.

7.6 Toxic Pollutants

The Permittee must comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

7.7 Planned Changes

The Permittee must give notice to the Director and the responsible IDEQ office as soon as possible of any planned physical alterations or additions to the permitted facility whenever:

- The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source as determined in 40 CFR §122.29(b); or
- The alteration or addition could significantly change the nature or increase the quantity of the pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in the permit.

7.8 Anticipated Noncompliance

The Permittee must give advance notice to the Director and IDEQ, using the addresses provided in Appendix A, of any planned changes in the permitted facility or activity which may result in noncompliance with this Permit.

7.9 Twenty-Four Hour Notice of Noncompliance Reporting

The Permittee must report to EPA the following occurrences of noncompliance by telephone at (206) 553-1846, within 24 hours from the time the Permittee becomes aware of the following circumstances; see also Appendix A.2:

- Any discharge to or from the MS4 which could result in noncompliance that may endanger human health or the environment;
- Any unanticipated bypass that results in or contributes to an exceedance of any effluent limitation in this Permit. See Part 7.106.10 (*Bypass of Treatment Facilities*);
- Any upset that results in or contributes to an exceedance of any effluent limitation in this Permit. See Part 6.11 (*Upset Conditions*).

7.9.1 Written Report

The Permittee must also provide a written submission within five (5) business days of the time that the Permittee becomes aware of any event required to be reported under subpart 1 above. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the estimated time noncompliance is expected to continue if it has not been corrected; and all steps taken or

planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Permittee must submit its written report to EPA and IDEQ as specified in Appendix A.

7.9.2 Written Report Waiver

EPA may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the NPDES Compliance Hotline in Seattle, Washington, by telephone, (206) 553-1846.

7.10 Bypass of Treatment Facilities

7.10.1 Bypass not exceeding limitations

The Permittee may allow any bypass to occur that does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 7.10.2 and 7.10.3 of this Part.

7.10.2 Notice

7.10.2.1 Anticipated bypass: If the Permittee knows in advance of the need for a bypass, it must submit prior notice, to the Director, if possible at least 10 days before the date of the bypass.

7.10.2.2 Unanticipated bypass: The Permittee must submit notice of an unanticipated bypass as required under Part 7.9 (*Twenty-four Hour Notice of Noncompliance Reporting*).

7.10.3 Prohibition of Bypass

Bypass is prohibited, and the Director may take enforcement action against the Permittee for a bypass, unless:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and
- The Permittee submitted notices as required under Part 7.10.2 above.

7.10.4 Optional Approval

The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part 7.10.3.

7.11 Upset Conditions

7.11.1 Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with a technology-based permit effluent limitation if the Permittee meets the requirements of Part 7.11.2 of this section. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

7.11.2 Conditions Necessary for a Demonstration of Upset

To establish the affirmative defense of upset, the Permittee must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- An upset occurred and that the Permittee can identify the cause(s) of the upset;
- The permitted facility was at the time being properly operated;
- The Permittee submitted notice of the upset as required under Part 7.9 (*Twenty-four Hour Notice of Noncompliance Reporting*) and,
- The Permittee complied with any remedial measures required under Part 7.4 (*Duty to Mitigate*).

7.11.3 Burden of Proof

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

7.12 Other Noncompliance

The Permittee must report all instances of noncompliance, not required to be reported within 24 hours, as part of each Annual Report. Such noncompliance reports must contain all the information listed above in Part 7.9.1.

7.13 Removed Substances

All collected screenings, grit, solids, sludges, filter backwash water, decant water, and/or other pollutants removed in the course of maintenance, and/or treatment or control of stormwater and other wastewaters must be managed and disposed of in a manner such as to prevent such pollutants from entering the waters of the U.S.

8 GENERAL REQUIREMENTS

8.1 Permit Actions

This Permit or coverage under this Permit may be modified, revoked and reissued, or terminated for cause by EPA as specified in 40 CFR §§122.62, 122.64, or 124.5. The filing of a request by the Permittee for a permit modification, revocation and reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

8.2 Duty to Reapply

If the Permittee intends to continue its operational control and management of discharges from the MS4 as regulated by this Permit after the Permit expiration date, the Permittee must apply for and obtain a new permit. In accordance with 40 CFR §122.21(d), and unless permission for the application to be submitted at a later date has been granted by the Director, the Permittee must submit an application at least 180 days before the Permit expiration date, or no later than **April 3, 2025**.

8.2.1 Contents of a Permit Renewal Application

The Permit Renewal Application must contain the information required by 40 CFR 122.21(f) which includes: name and mailing addresses of the Permittee that operate the MS4(s), and the names and titles of the primary administrative and technical contacts for the Permittee. In addition, the Permittee must identify the identification number of the existing NPDES MS4 permit; and any previously unidentified water bodies that receive discharges from the MS4. The following attachments must be submitted as part of a complete Permit Renewal Application:

- 8.2.1.1 Updated SWMP Document, as required by Part 2.5.3 and described in Appendix B;
- 8.2.1.2 MS4 Map, and the accompanying Outfall Inventory, as required by Part 3.2.2;
- 8.2.1.3 List of MS4 outfall locations with dry weather flows identified by the Permittee as being associated with irrigation return flows and/or groundwater seepage, including latitude/longitude and physical description/characteristics, as required by Part 3.2.6.2;
- 8.2.1.4 Enforcement Response Policy for Construction Site Runoff Control, as required by Part 3.3.6;
- 8.2.1.5 Enforcement Response Policy for Permanent SW Management Controls, as required by Part 3.4.5.2;
- 8.2.1.6 If applicable, a written summary of the Permittee's adaptive management actions to date, as required by Part 5.5;
- 8.2.1.7 If applicable, a Final Report summarizing any required Monitoring/Assessment activities; see Part 4 and Part 6.4.3; and
- 8.2.1.8 If applicable, a Final Report summarizing implementation and effectiveness of Pollutant Reduction Activities to date; see Part 4 and Part 6.4.4.

8.3 Duty to Provide Information

The Permittee must furnish to EPA and IDEQ, within the time specified in the request, any information that the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit.

The Permittee must also furnish to EPA or IDEQ, upon request, copies of the records required to be kept by this Permit.

8.4 Other Information

When the Permittee becomes aware that it failed to submit any relevant facts in a Notice of Intent, or that it submitted incorrect information in a NOI, permit application, or any report or document to EPA or IDEQ, it must promptly submit the omitted facts or corrected information in writing.

8.5 Signatory Requirements

All permit applications, NOIs, reports, or information submitted to EPA and IDEQ must be signed and certified as follows:

8.5.1 All applications must be signed and certified:

- For a corporation: by a principal corporate officer.
- For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.
- For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official.

8.5.2 Duly Authorized Representative

All Annual Reports required by this Permit and other information requested by EPA or IDEQ must be signed by a person described in Part 8.5.1 above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

8.5.2.1 The authorization is made in writing by a person described above and submitted to the Director;

8.5.2.2 The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity,

Such as the position of plant manager, owner or operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

8.5.2.3 Written authorization is submitted to the Director and IDEQ.

8.5.3 Changes to Authorization

If an authorization under Part 8.5.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part 8.5.2 must be submitted to EPA and IDEQ prior to or together with any reports, information, or applications to be signed by an authorized representative.

8.5.4 Certification

Any person signing a document under this Part must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for

gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

8.6 Availability of Reports

In accordance with 40 CFR §2, information submitted to EPA pursuant to this Permit may be claimed as confidential by the Permittee. In accordance with the CWA, permit applications, permits, and effluent data are not considered confidential. Any confidential claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice to the Permittee. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR §2, Subpart B (Public Information) and 41 Federal Register 36924 (September 1, 1976), as amended.

8.7 Inspection and Entry

The Permittee must allow the Director; IDEQ; or an authorized representative (including an authorized contractor acting as a representative of the Director), upon the presentation of credentials and other documents as may be required by law, to:

8.7.1 Enter

Upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;

8.7.2 Access

Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

8.7.3 Inspect

Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

8.7.4 Sample, monitor, evaluate or audit

At reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the CWA, any discharges, substances or parameters at any location.

8.8 Property Rights

The issuance of this Permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

8.9 Transfers

Coverage under this Permit is not transferable to any person except after written notice to the Director of EPA Region 10 Water Division. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the CWA.

8.10 State/Tribal Laws

Nothing in this Permit shall be construed to preclude the institution of any legal action or relieve

the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state/Tribal law or regulation under authority preserved by Section 510 of the CWA. No condition of the Permit releases the Permittee from any responsibility or requirements under other environmental statutes or regulations.

8.11 Oil and Hazardous Substance Liability

Nothing in this Permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under Section 311 of the Clean Water Act or Section 106 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

8.12 Severability

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Permit, shall not be affected thereby.

8.13 Re-opener Clause

This Permit is subject to modification, revocation and reissuance, or termination at the request of any interested person (including the Permittee) or upon EPA initiative. However, permits may only be modified, revoked or reissued, or terminated for the reasons specified in 40 CFR §§122.62 or 122.64, and 40 CFR §124.5. This includes new information which was not available at the time of permit issuance and would have justified the application of different permit conditions at the time of issuance, including but not limited to future monitoring results. All requests for Permit modification must be addressed to EPA in writing and shall contain facts or reasons supporting the request.

9 DEFINITIONS

Administrator, as used in this Permit without qualifier, means the Administrator of the United States Environmental Protection Agency, or an authorized representative [40 CFR §122.2].

Appropriate means reasonable in intensity, duration, and magnitude.

Appropriate Action, as used in Part 3.2.6 of this Permit, means documentation in the Permittee's Annual Reports and SWMP Document of the MS4 outfall location(s) where the Permittee determines that the source of the ongoing dry weather flow is from either irrigation or groundwater seepage.

Best Management Practice, or *BMP*, means schedules of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. See 40 CFR §§ 122.2 and 122.44(k). For the purposes of this Permit, *BMP* broadly refers to any type of structural or non-structural practice or activity undertaken by the Permittee in the course of implementing its SWMP.

Bioretention means the water quality and water quantity stormwater management practice using the chemical, biological and physical properties of plants, microbes and soils for the removal of pollution from stormwater runoff.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

CFR means the Code of Federal Regulations, which is the official annual compilation of all regulations and rules promulgated during the previous year by the agencies of the United States government combined with all the previously issued regulations and rules of those agencies that are still in effect.

CGP and/or Construction General Permit means the current available version of EPA's NPDES *General Permit for Stormwater Discharges for Construction Activities in Idaho*, Permit No. IDR12-0000. EPA's CGP is posted on EPA's website at www.epa.gov/npdes/stormwater/cgp.

Coeur d'Alene Urbanized Area or the *Permit Area* is defined by the decennial census data from Year 2000 and Year 2010. An urbanized area is the densely settled core of census tracts and/or census blocks that have a population of at least 50,000, along with adjacent territory containing non-residential urban land uses as well as territory with low population density included to link outlying densely settled territory with the densely settled core. It is a calculation used by the Bureau of the Census to determine the geographic boundaries of the most heavily developed and dense urban areas. Once a small MS4 is designated into the program based on the UA boundaries, it cannot be waived from the program if in a subsequent UA calculation the small MS4 is no longer within the UA boundaries. The following websites are for the Census 2000 and Census 2010 Coeur d'Alene Urbanized Area maps, respectively:

http://www2.census.gov/geo/maps/urbanarea/uaoutline/UA2000/ua18451/ua18451_01.pdf

and

http://www2.census.gov/geo/maps/dc10map/UAUC_RefMap/ua/ua18451_coeur_dalene_id/

Common Plan of Development means a contiguous construction project or projects where multiple separate and distinct construction activities may be taking place at different times on different schedules but under one plan. The "plan" is broadly defined as any announcement or piece of documentation or physical demarcation indicating construction activities may occur on a

specific plot; included in this definition are most subdivisions and industrial parks.

Construction activity includes, but is not limited to, clearing, grading, excavation, and other site preparation work related to the construction of residential buildings and non-residential buildings, and heavy construction (e.g., highways, streets, bridges, tunnels, pipelines, transmission lines and industrial non-building structures).

Control Measure, as used in this Permit, refers to any action, activity, Best Management Practice or other method used to control the discharge of pollutants in MS4 discharges.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483, and Public Law 97-117, 33 U.S.C. § 1251 et seq. [40 CFR §122.2].

Deleterious Materials is defined at IDAPA 58.01.02.010.21, and means any nontoxic substance which may cause the tainting of edible species of fish, taste and odors in drinking water supplies, or the reduction of the usability of water without causing physical injury to water users or aquatic and terrestrial organisms.

Director means the Regional Administrator of EPA Region 10, or the Director of EPA Region 10 Water Division. After July 1, 2021, "Director" may also refer to an authorized representative of the Idaho Department of Environmental Quality.

Discharge when used without qualification means the "discharge of a pollutant."

Discharge of a pollutant means any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger" [40 CFR §122.2].

Erosion means the process of carrying away soil particles by the action of water.

Effluent limitation means any restriction imposed by the Director on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," [40 CFR §122.2]. The terms and conditions of this Permit are a type of effluent limitations and refers to actions designed to reduce pollutant discharges. See also 40 CFR §122.34 and 81 FR 89337 (Dec. 9, 2016).

Existing Permanent Controls, in the context of this Permit, means post- construction or permanent stormwater management controls designed to treat or control runoff on a permanent basis and that were installed prior to the effective date of this Permit.

Facility means any NPDES point source or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

Grab sample means a single water sample or measurement of water quality taken at a specific time.

Green infrastructure is defined in Section 502 of the Clean Water Act and means the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or

substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters.

Hazardous materials is defined at IDAPA 58.01.02.010.47 and means a material or combination of materials which, when discharged in any quantity into state waters, presents a substantial present or potential hazard to human health, the public health, or the environment. Unless otherwise specified, published guides such as Quality Criteria for Water (1976) by EPA, Water Quality Criteria (Second Edition, 1963) by the state of California Water Quality Control Board, their subsequent revisions, and more recent research papers, regulations and guidelines will be used in identifying individual and specific materials and in evaluating the tolerances of the identified materials for the beneficial uses indicated.

Impaired water means any water body that does not meet applicable water quality standards for one or more beneficial uses by one or more pollutants. For the purposes of this Permit, *impaired water* includes any water body that IDEQ includes in its 2016 Integrated Report, as a "Category 4a" water of the state for which a total maximum daily load has been completed and approved; as a "Category 4b" water of the state that have pollution control requirements in place other than a TMDL and are expected to meet standards; and/or as a "Category 5" water of the state where a TMDL is necessary. The term impaired water also includes any interstate surface water body that originates in Idaho and flows into Washington that the Washington Department of Ecology categorizes as Category 4a, 4b, or 5 in its latest Water Quality Assessment 305(b) Report and 303(d) List as approved by EPA on July 22, 2016.

Impairment pollutants, for the purposes of this Permit, means any pollutant identified by IDEQ or WDOE as a cause of impairment of any water body that receives MS4 discharges authorized under this Permit. See also "impaired water."

Indian Tribe means any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian Reservation [40 CFR §122.2].

Infiltration is the process by which stormwater penetrates into soil.

Illicit connections include, but are not limited to, pipes, drains, open channels, or other conveyances that have the potential to allow an illicit discharge to enter the MS4.

Illicit discharge means any discharge to a municipal storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges from firefighting activities. See 40 CFR 122.26(b)(2).

Interconnection means the point (excluding sheet flow over impervious surfaces) where the Permittee's MS4 discharges to another MS4 or other storm sewer system, through which the discharge is eventually conveyed to a water of the United States. Interconnections shall be treated similarly to outfalls throughout the Permit.

Low Impact Development or LID means stormwater management and land development techniques, controls and strategies applied at the parcel and subdivision scale that emphasize conservation and use of on-site natural features integrated with engineered, small scale hydrologic controls to more closely mimic pre-development hydrologic functions.

Method Detection Limit (MDL) means the minimum concentration of a substance (analyte) that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minimum Level (ML) means either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL). Minimum levels may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor.

MEP or maximum extent practicable, means the technology-based discharge standard for municipal separate storm sewer systems to reduce pollutants in stormwater discharges that was established by Section 402(p) of the Clean Water Act, 33 U.S.C §1342(p).

Minimize means to reduce and/or eliminate to the extent achievable using control measures (including BMPs) that are technologically available, economically practicable, and achievable in light of best industry or municipal practices.

MS4 means "municipal separate storm sewer system," and is used in this document to refer to 'Small Municipal Separate Storm Sewer System' as defined in 40 CFR 122.26(b)(16). The term, as used in the context of this Permit, refers to those portions of the municipal separate storm sewer systems owned and/or operated by the entities named herein. See also *Municipal Separate Storm Sewer*, and *Small MS4*.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the CWA.

Municipal Separate Storm Sewer is defined in 40 CFR §122.26(b)(8) and means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the CWA that discharges to waters of the United States; (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA [40 CFR §122.2].

Nuisance means anything which is injurious to the public health or an obstruction to the free use, in the customary manner, of any waters of the State [IDAPA 58.01.02.010.67].

Outfall is defined at 40 CFR §122.26(b)(9) means a point source (see definition below) at the point where a municipal separate storm sewer discharges to waters of the United States, and does not include open conveyances connecting two municipal separate storm sewers or pipes, tunnels, or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States.

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES program.

Permanent Stormwater Controls, or practices, permanent controls, and/or Post-construction stormwater management controls means those structural and non-structural controls that are designed to treat or control pollutants in stormwater runoff on a permanent basis.

Point Source is defined at 40 CFR §122.2 and means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials [except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2011 et seq.)], heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water [40 CFR §122.2].

Pollutant(s) of concern, for the purposes of this Permit, means any pollutant identified by IDEQ or WDOE as a cause of impairment of any water body that receives MS4 discharges authorized under this Permit. See also "impaired water."

Post- construction stormwater management controls or "permanent stormwater controls" means those controls designed to treat or control runoff on a permanent basis once construction is complete. See also "new permanent controls" and "existing permanent controls."

Redevelopment, for the purposes of this Permit, means the alteration, renewal or restoration of any developed land or property that results in land disturbance of one acre or more, or less than one acre that is part of a common plan of development or sale that exceeds one acre, and that has one of the following characteristics: land that currently has an existing structure, such as buildings or houses; or land that is currently covered with an impervious surface, such as a parking lot or roof; or land that is currently degraded and is covered with sand, gravel, stones, or other non-vegetative covering.

Source control means practices that control stormwater before pollutants have been introduced into stormwater.

Stormwater and *storm water runoff* as used in this Permit means stormwater runoff, snow melt runoff, and surface runoff and drainage, and is defined at 40 CFR §122.26(b)(13). "Stormwater" means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, channels, or pipes into a defined surface water channel or a constructed infiltration facility.

Stormwater Control Measure or *Stormwater Management Program Control Measure*, means the physical, structural, and/or managerial measures that, when used singly or in combination, reduce the downstream quality and quantity impacts of storm water runoff. Also, stormwater control measure means a permit term or condition used to prevent or control the discharge of pollutants. This may include a schedule of activities, prohibition of practices, maintenance procedures, or other management practices. Stormwater control measures may include, but are not limited to, treatment requirements; operating procedures; practices to control plant site runoff, spillage, leaks, sludge, or waste disposal; or drainage from raw material storage. See *best management practices* (BMPs). Minimum stormwater control measures are defined 40 CFR §122.34(b).

Stormwater Management Practice or *Stormwater Management Control* means practices that manage stormwater, including structural and vegetative components of a storm water system.

Stormwater Management Program (SWMP) refers to a comprehensive program to manage the

quality of storm water discharged from the municipal separate storm sewer system. For the purposes of this Permit, the SWMP consists of the actions and activities conducted by the Permittee as required by this Permit and described in the Permittee's SWMP Document. A "SWMP Document" is the written summary describing the unique and/or cooperative means by which an individual Permittee or entity implements the specific stormwater management control measures required by this Permit within their jurisdiction.

Stormwater Pollution Prevention Plan (SWPPP) means a site-specific plan designed to describe the control of soil, raw materials, or other substances to prevent pollutants in stormwater runoff; a SWPPP is generally developed for a construction site, or an industrial facility. For the purposes of this Permit, a SWPPP means a written document that identifies potential sources of pollution, describes practices to reduce pollutants in stormwater discharges from the site, and identifies procedures or controls that the site operator will implement to reduce impacts to water quality and comply with applicable Permit requirements.

Small municipal separate storm sewer system, or Small MS4, is defined at 40 CFR 122.26(b)(16) and (17), respectively, and means all separate storm sewers that are: (i) owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) not defined as "large" or "medium" municipal separate storm sewer systems pursuant to 40 CFR 122.26(b)(4) and (b)(7), or designated under paragraph 40 CFR 122.26(a)(1)(v); and (iii) includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

Snow management means the plowing, relocation, and collection of snow.

Total Maximum Daily Load, or TMDL means the sum of the individual wasteload allocations for point sources, load allocations (LAs) for non-point sources, and natural background. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality [IDAPA 58.012.02.010.100].

Toxic Substance is defined at IDAPA 58.01.02.010.102, and means any substance, material or disease-causing agent, or a combination thereof, which after discharge to waters of the State and upon exposure, ingestion, inhalation or assimilation into any organism (including humans), either directly from the environment or indirectly by ingestion through food chains, will cause death, disease, behavioral abnormalities, malignancy, genetic mutation, physiological abnormalities (including malfunctions in reproduction) or physical deformations in affected organisms or their offspring. Toxic substances include, but are not limited to, the one hundred twenty-six (126) priority pollutants identified by EPA pursuant to Section 307(a) of the federal Clean Water Act.

Treatment means the reduction and removal of pollutants from stormwater.

Uncontaminated, for the purposes of this Permit, means that the MS4 discharge does not:

- result in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 40 CFR 302.6 at any time since November 16, 1987; or

- result in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since November 16, 1987; or
- Contribute to a violation or exceedance of an applicable Idaho Water Quality Standard.

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation [40 CFR §122.41(n)].

Waters of the United States or waters of the U.S. means those waters defined in 40 CFR §120.2.

APPENDIX A - ADDRESSES & CONTACT INFORMATION

1. Alternative Control Measure Requests, Notifications, and Permit Renewal

Applications: Such documents must be signed as required by Part 7.5, and submitted by U.S. Postal Mail to both EPA and IDEQ addresses below:

*Director, Water Division
Attn: ID MS4 Permit Coordinator
U.S. EPA, Region 10
1200 6th Avenue, Suite 155
Mail Code 19-C04
Seattle, Washington 98101*

*Regional Administrator
Coeur d'Alene Regional Office
Idaho Department of Environmental Quality
Attn: Surface Water Program
2110 Ironwood Parkway,
Coeur d'Alene, Idaho 83814*

2. Reporting of Discharges Containing Hazardous Materials or Deleterious Material:⁵

All spills of hazardous material, deleterious material or petroleum products which may impact waters (ground and surface) of the state shall be immediately reported.

Call 911 if immediate assistance is required to control, contain or clean up the spill.

If no assistance is needed in cleaning up the spill, contact the Coeur d'Alene Regional Office at 208-769-1422 during normal working hours or Idaho State Communications Center after normal working hours.

If the spilled volume is above federal reportable quantities, contact the National Response Center.

For immediate assistance: Call 911

National Response Center: (800) 424-8802

Idaho State Communications Center: (800) 632-8000

See also Part 6.9 (*Twenty-Four Hour Notice of Noncompliance Reporting*).

3. Annual Reports, including any necessary attachments as required by this Permit:

Such documents must be signed as required by Part 5, and submitted by U.S. Postal Mail to both EPA and IDEQ addresses below:

*U.S. EPA, Region 10
Enforcement & Compliance Assurance Division
1200 6th Avenue, Suite 155
Mail Code 20-CO4
Seattle, Washington 98101*

*Regional Administrator
Coeur d'Alene Regional Office
Idaho Department of Environmental Quality
Attn: Surface Water Program
2110 Ironwood Parkway,
Coeur d'Alene, Idaho 83814*

⁵ Appendix A.2 is a condition of the IDEQ's *Final §401 Water Quality Certification for the City of Coeur d'Alene Municipal Separate Storm Sewer System*; NPDES Permit # IDS028215, dated July 1, 2020.

4. General Contact Information for EPA and IDEQ

<i>EPA Region 10</i>	<i>Toll Free Phone Number</i>	<i>Phone Number</i>
EPA Region 10 Water Division, NPDES Permitting Section 1200 6th Avenue, Suite 155 Mail Code 19-CO4 Seattle WA 98101	800 424-4372, extension 6650	206-553-6650
<i>IDEQ State Office</i>	<i>Toll Free Phone Number</i>	<i>Phone Number</i>
Surface Water Program 1410 North Hilton Street Boise, ID. 83706		208-373-0502
<i>IDEQ Regional Office</i>	<i>Toll Free Phone Number</i>	<i>Phone Number</i>
Coeur d'Alene Regional Office 2110 Ironwood Parkway, Coeur d'Alene, Idaho 83814	877-370-0017	208-769-1422

APPENDIX B – SWMP DOCUMENT & ANNUAL REPORT TEMPLATES

This Appendix outlines the content of the SWMP Document and Annual Reports and provides an example template for each required document.

Appendix B.1 - SWMP Document Template (see Separate Document)

Appendix B.2 - Annual Report Form (See Separate Document)



Appendix B – Accurate Testing Labs Quality Manual

Accurate Testing Labs, LLC
7950 Meadowlark Way
Coeur d'Alene, ID 83815
208-762-8378

Quality Assurance Manual

SOP Code: QA MANUAL

Revision: 22

Date: 5/12/2021

Author:

Laboratory Director Walter Mueller Date

Approved:

Drinking Rhena Cooper Date
Water Microbiology Consultant

The following have read this Standard Operating Procedure and understand the requirements set forth in it. By signing this document, these people acknowledge their responsibility to follow the procedures outlined:

SOP Code: QA MANUAL
SOP Name: Quality Assurance Manual
Revision: 22

Name:
(Please Print)

Signature:

Date

TABLE OF CONTENTS

1. INTRODUCTION
 - 1.1 Purpose
 - 1.2 Proclamation
2. GOALS AND OBJECTIVES
 - 2.1 Purpose and Scope
 - 2.2 Specific Objectives
3. QUALITY POLICIES
 - 3.1 Purpose and Scope
 - 3.2 Laboratory Quality Policy
4. QA/QC MANAGEMENT ORGANIZATION
 - 4.1 Purpose and Scope
 - 4.2 Quality Control Coordinator-Job Description
 - 4.3 Analysts, and Data Management
5. MANAGEMENT OF QA MANUALS
 - 5.1 Purpose and Scope
 - 5.2 Issues, Distribution and Maintenance Manual
6. SAMPLE CONTROL, HANDLING, STORAGE AND SHIPPING
 - 6.1 Purpose and Scope
 - 6.2 Physical Condition of the Sample Container
 - 6.3 Sample Integrity
 - 6.4 Sample Identification
 - 6.5 Sample Storage
7. CHAIN-OF-CUSTODY PROCEDURES
 - 7.1 Purpose and Scope
 - 7.2 Chain-of-Custody
 - 7.3 Procedure
8. LABORATORY METHODOLOGY, VALIDATION, & ANALYSIS CONTROL
 - 8.1 Purpose and Scope
 - 8.2 Methods
 - 8.3 Standard Operating Procedures
 - 8.4 Method Validation
 - 8.5 Function and Control Checks
 - 8.6 Control Charts
9. FACILITIES, EQUIPMENT AND PREVENTATIVE MAINTENANCE
 - 9.1 Purpose and Scope
 - 9.2 Facilities
 - 9.3 Instrumentation
10. REFERENCE STANDARDS
 - 10.1 Purpose and Scope
 - 10.2 Policies
 - 10.3 Purchase and Receipt
 - 10.4 Daily use
11. LABORATORY DOCUMENTATION

- 11.1 Purpose and Scope
- 11.2 Client Files
- 11.3 Sample Tracking
- 11.4 Standard Logbooks
- 11.5 Instrument and Maintenance Logbooks
- 11.6 Electronic Data and Programs
- 11.7 Hard Copy Data
- 11.8 Data handling
- 11.9 Other
- 12. DATA VALIDATION
 - 12.1 Purpose and Scope
 - 12.2 General
- 13. NON-CONFORMANCE, CUSTOMER CONCERNS, AND AUDITS
 - 13.1 Purpose and Scope
 - 13.2 Experimental Non-conformance
 - 13.3 Customer Concerns and Complaints
 - 13.4 Negative Audit Reports
- 14. SUBCONTRACTING
 - 14.1 Purpose and Scope
 - 14.2 Quality Assurance in Contract Laboratories
- 15. PERSONNEL QUALIFICATIONS AND TRAINING
 - 15.1 Purpose and Scope
 - 15.2 Qualifications
 - 15.3 Continuing Education Opportunities
 - 15.4 In-house Training
 - 15.5 In-house Training Methods
 - 15.6 Training Evaluation
- 16. QUALITY CONTROL PROTOCOL
 - 16.1 Purpose and Scope
 - 16.2 Initial Demonstration of Performance
 - 16.3 Linear Calibration Range (LCR)
 - 16.4 Quality Control Samples (QC)
 - 16.5 Method Detection Limit (MDL)
 - 16.6 Laboratory Reagent Blank (PBLK)
 - 16.7 Laboratory Fortified Blank (LFB)
 - 16.8 Sample
 - 16.9 Matrix Spike (MS)
 - 16.10 Field Duplicate (FD)
 - 16.11 Instrument Performance Check Solution (IPC)
 - 16.12 Laboratory Fortified Sample Matrix (MS)
 - 16.13 Instrument Detection Limit (MDL)
 - 16.14 Mathematical Equations
- 17. DEFINITIONS
- 18. CHANGES FROM PREVIOUS REVISIONS

Appendix A *Laboratory Instrumentation*

Figure 4-1

Appendix B *Forms and Log Sheets*

1.0 INTRODUCTION

1.1 Purpose

1.1.1 This manual describes the quality assurance system employed at ATL. This is in compliance with the intent of the general quality system requirements of the following organizations: Environmental Protection Agency (EPA), Idaho Department of Health and Welfare (DOH), Department of Environmental Quality (DEQ), American Society for Testing and Materials (ASTM), and other accrediting organizations. The policy of ATL is to apply the system to all testing and analytical activities undertaken on behalf of the customers in order to meet their requirements for quality assurance and quality control.

1.1.2 Quality Control is defined as routine, daily activities, which ensure that data generated meets acceptable levels of quality. These are generally physical activities or activities where data is compared to established norms with decisions made based on that comparison. Items such as performing matrix spikes, comparing standard responses to established limits, repeating samples when concentrations are above calibration ranges, etc. are "quality control" activities.

1.1.3 This manual provides personnel and customers of ATL with a description of company policy for maintaining an effective quality assurance program developed in conjunction with other management planning functions. It also describes the general quality assurance and quality control program. The specific procedures are addressed in the Standard Operating Procedures (SOP) Manual.

1.2 Proclamation

1.2.1 The Quality Assurance Program described in this Quality Assurance Manual has the absolute and unqualified support of the management of ATL. These procedures are binding on all personnel of the laboratory and shall be adhered to, implicitly.

1.2.2 Our established goal; deliverance of highest quality service at a reasonable price; is the same today as when the laboratory was founded in 1995.

1.2.3 Our testing and analytical services, the care with which they are conducted, and their customer acceptance, are the means by which ATL has gained an enviable reputation and has become a leader in the industry. Being a leader in quality analytical testing is our number one priority and every member of the laboratory staff shares the responsibility of maintaining our present and future status.

1.2.4 All ATL personnel are expected to use this manual as a guide to the continued maintenance and improvement of the quality of our laboratory services.

2.0 GOALS AND OBJECTIVES

2.1 Purpose and Scope

2.1.1 The purpose of this section is to outline the Quality Objectives of Accurate Testing Labs, LLC.

2.1.2 The objective of the Laboratory Quality Assurance Program is to assure accuracy and precision, as well as reliability, of laboratory results produced for our customers, or at the request of regulatory or accrediting bodies. The QA/QC purposes are:

2.1.2.1 To maintain the physical sample's integrity and the data results validity and usability.

2.1.2.2 Ensure the analytical measurement systems are maintained in an acceptable state of stability and reproducibility.

2.1.2.3 Detect problems through data assessment and establish corrective action procedures, which keep the analytical process reliable.

2.1.2.4 Document all aspects of the measurement and reporting process in order to provide data, which is technically sound and legally defensible.

2.2 Specific Objectives

2.2.1 The initial data quality objective for each method is to achieve precision and accuracy levels that are cited in Standard Methods. Once control charts have been established for each analytical parameter, the statistics used for the chart, i.e., the mean and standard deviation, become the Data Quality Objectives (DQO's) for these tests.

2.2.2 Establish and update on a regular basis, the quality assurance and quality control program, which includes this manual.

2.2.3 Put into service, methods capable of meeting the user's needs for precision, accuracy, sensitivity, and specificity.

2.2.4 Ensure that all staff members receive training in basic quality technology; in sufficient depth to enable them to carry out the provisions of this manual.

2.2.5 Establish the level of quality of the laboratory's routine performance as a baseline against which to measure the effectiveness of quality improvement efforts.

2.2.6 Improve and validate laboratory methodologies by participation in method validation studies.

3.0 QUALITY POLICIES

3.1 Purpose and Scope

3.1.1 This section lists policies to be implemented by the laboratory in order to achieve the objectives set forth in section 2 and in the furtherance of the overall quality control program.

3.1.2 This section sets forth only the outlines of management's policies with regard to Quality Assurance. Details for carrying out these policies appear in later sections of the manual.

3.2 Laboratory Quality Policy

3.2.1 Quality activities shall emphasize the prevention of quality problems rather than detection and correction of problems after they occur.

3.2.2 The laboratory shall use published analytical and test methodologies whenever possible.

3.2.3 The laboratory shall retain copies of all test and analytical reports for a period specified by regulatory or accrediting bodies.

3.2.4 The laboratory shall use appropriate reagents and chemicals, certified when necessary, and appropriate calibrated glassware.

4.0 THE QA/QC MANAGEMENT ORGANIZATION

4.1 Purpose and Scope

4.1.1 This section describes the QA/QC organization of ATL. All analytical chemistry responsibilities fall under the control of the Laboratory Director. The QA/QC Coordinator supervises the responsibilities for the overall QA/QC program. The Lab Director and individual analysts assume additional responsibilities.

4.1.2 The management of a Quality Control Program as described in this manual requires the services of a Quality Control Coordinator within the laboratory to carry out the monitoring, record-keeping, statistical techniques, calibration, and other functions required by the system.

4.1.3 The Organization Chart of ATL illustrating the placement of the quality function within the organization is shown in *Figure 4-1* on page 36 of this manual.

4.2 Quality Control Coordinator-Job Description

4.2.1 Basic Function: The Quality Control Coordinator is responsible for the implementation of the Quality Control Program and for taking or recommending measures to ensure continuing accuracy and precision of data produced.

4.2.2 Responsibilities and Authority: The Quality Control Coordinator performs the following tasks:

4.2.2.1 Develops and carries out quality control programs, including statistical procedures and techniques, which will enable the laboratory to meet desired quality standards at minimum cost; and advises and assists management in the installation, staffing, and supervision of such programs.

4.2.2.2 Monitors quality control activities of the laboratory to determine compliance with authorized policies and procedures. Makes appropriate recommendations for correction and improvement as necessary. Maintains files of non-conformance records.

4.2.2.3 Reviews all client reports to ensure all QA/QC requirements have been met. QA/QC requirements include in-house requirements, regulatory requirements, project-specific requirements, and client-requested requirements.

4.2.2.4 Seeks out and evaluates new ideas and current developments in the field of quality control and recommends means for their application wherever advisable.

4.2.2.5 Reviews new technology, methods, equipment, and advises management as to such use, with respect to quality aspects.

4.2.2.6 Advises the Purchasing Component with regard to the quality of purchased equipment, materials, reagents, and chemicals.

4.2.2.7 Recommends packaging materials and procedures as well as necessary changes.

4.2.2.8 Coordinates the review of QA Manuals.

4.2.2.9 Coordinates all chemical and administrative audits and certification programs.

4.2.2.10 Maintains the QA/QC file.

4.2.2.11 Insures the SOP Manuals are current.

4.2.2.12 Ensures that all individual analysts comply with QC requirements as outlined in the Standard Operating Procedures.

4.2.2.13 Performs other related duties as may be assigned.

4.3 Analysts, and Data Management

4.3.1 In addition to the Lab Director and Quality Assurance Coordinator, quality responsibilities fall upon various other individuals.

4.3.2 Analysts are responsible for ensuring that the instruments, reagents, experiments, etc. meet the criteria for acceptability as outlined in the Standard Operating Procedures, which they follow. They generate initial client data, monitor all QC facets of the analyses, and alert the Lab Director to any abnormalities.

4.3.4 The quality assurance coordinator is responsible for accurately converting raw data into client-ready reports, and for auditing the final reports. They are responsible for maintaining all client files, auditing data for gross errors, and proper archiving of all laboratory data, reports, electronic media, and methodologies.

5.0 MANAGEMENT OF QUALITY ASSURANCE MANUALS

5.1 Purpose and Scope

5.1.1 The purpose of this section is to define the tasks and responsibilities relating to the preparation, review, and maintenance of the Quality Assurance Manual.

5.2 Maintenance of the Manual

5.2.1 The Quality Control Coordinator bears the primary responsibility for the preparation, review, and upkeep of the Laboratory Quality Assurance Manual.

5.2.2 Copies of the manual may be distributed, from time-to-time to individuals or organizations outside the laboratory.

5.2.3 The Quality Control Coordinator is responsible for the timely, periodic review of the content of the manual to ensure that its requirements reflect current operating conditions.

6.0 SAMPLE CONTROL, HANDLING, STORAGE, AND SHIPPING

6.1 Purpose and Scope

6.1.1 The purpose of this section is to describe the duties and responsibilities of the Sample Custodian and Quality Control Coordinator with respect to shipping, packaging, handling, and storage of samples.

6.1.2 This section provides guidance in making decisions pertinent to the validity and acceptability of samples submitted for testing or analysis. While it is particularly pertinent to samples submitted to the laboratory for environmental analysis, its principles apply broadly to all types of samples, the goal being the preservation of the integrity of the sample.

6.2 Physical Condition of the Sample Container

6.2.1 Physical damage to the sample container received from commercial clients or others may be the fault of the carrier due to abusive handling or faulty packaging. If damage to the container is evident, the condition of the container shall be noted on the chain of custody. The package will be carefully opened, and its contents inspected. In the event of damage to the sample, the sender will be

notified. The client shall make a decision concerning the disposition of the sample as to whether or not analytical testing is to be conducted, the sample to be returned, or if it is to be discarded.

6.3 Sample Integrity

6.3.1 Sample integrity refers to the cumulative end result of those factors, which contribute to the overall validity of a sample. Sample integrity is promoted and preserved by adhering to adequate custodial handling and identification procedures by those individuals collecting samples, up to the point of receipt of the samples by the laboratory.

6.3.2 ATL shall have available proper sample containers for sample collection and transportation to the lab. The lab maintains a current inventory of EPA, DOH, and DEQ approved containers and literature outlining their use.

6.3.3 When the samples are received for testing or analysis they are checked for:

6.3.3.1 Physical damage due to inadequate packing and protection.

6.3.3.2 That samples were collected in the proper container and sufficient amount was collected to perform all analyses including duplicates, retesting, QA/QC matrix spikes, etc.

6.3.3.3 Loss of sample because of inadequate or improper sealing.

6.3.3.4 Cross-contamination of samples due to inadequate separation of sample types.

6.4 Sample Identification

6.4.1 A basic requirement of sample control is accurate sample identification. Samples that cannot be related to specific sample identification information on the associated sample chain of custody because of inadequate, ambiguous, or non-existent labeling will be quarantined until the client is able to provide specific identification.

6.4.2 Upon receipt at the laboratory, each independent sample shall be given a unique ATL identification number and labeled accordingly. The number shall also be written on the Chain of Custody along with date and time of receipt.

6.4.3 All drinking water samples that require metal analysis (excluding method EPA 200.5 or if the samples are acid digested) are recorded in the Log-in book noting the date and time preserved. This log is in accordance with EPA regulations pertaining to methods for the analysis and determination of metals in drinking water.

6.4.4 An internal tracking system is in place within the lab as tests are performed on samples. Each sample is recorded in the Sample Tracking log; noting the date, time, sample number, tests to be done, the storage place, when the sample is logged out for testing, and when disposal of the sample occurs. Each incident that involves the movement of the sample in the lab has a date, time, and the initials of the individual involved noted in the log.

6.5 Sample Storage

6.5.1 After the log-in procedure is complete, the samples are stored according to the procedures set forth in the appropriate EPA, ASTM, or other methodology. Generally, samples are stored in ascending identification number order at 1-5°C and protected from cross-contamination. Some samples, such as solids may be stored at ambient room temperature as refrigeration is not required.

Samples are not to be stored with standard reference materials.

7.0 CHAIN-OF-CUSTODY PROCEDURES

7.1 Purpose and Scope

7.1.1 This section describes the procedures to be followed when strict Chain-of-Custody (COC) protocols for samples received must be followed.

7.1.2 A detailed SOP describing the tracking of every sample that enters the ATL facility is located in the SOP manual. It is available to employees from the Quality Control Coordinator.

7.1.3 This laboratory follows strict Chain-of-Custody procedures in handling all environmental samples received for testing or analysis. Additionally, these procedures are followed for all other samples where it is so requested by the client. Usually, chain-of-custody documentation is necessary when laboratory results are to be used as evidence in legal proceedings. This documentation is prepared in addition to the normal sample processing paperwork.

7.2 Chain-of-Custody Documentation Form

7.2.1 The Chain-of-Custody Form will be used as the Chain-of-Custody record. One of these forms will be completed for each sample batch.

7.3 Procedure

7.3.1 All shipping containers sent to clients are to have one or more Chain-of-Custody Forms present. The form is to be filled out by the sampling personnel and is to accompany the samples at all times.

7.3.2 Upon receipt at the laboratory, if requested by a customer, the sample temperature is recorded. The samples identification numbers, matrices, and containers are checked against the information on the form, discrepancies noted, and ATL identification numbers are written on form and sample containers. The form is signed, dated, and then a copy is given to the client upon request. The original is placed in the active client file upon completion of all tests.

7.3.3 The original Chain-of-Custody is to always accompany the sample. If a sample is split, such as for sub-contracting analyses, a separate COC shall be filled out and follow the sample as above.

7.3.4 After being logged in, samples are then placed in the appropriate area until analyses are performed.

7.3.5 In addition to the Chain-of-Custody Form, a variety of laboratory sample tracking documentation is maintained such as sample log-in/log-out from the Sample Control area, instrument bench sheets noting when samples were prepped/analyzed, laboratory notebooks, etc. Disposal of samples after completion of testing is documented.

8.0 LABORATORY METHODOLOGY, VALIDATION, AND ANALYSIS CONTROL

8.1 Purpose and Scope

8.1.1 This section deals with the methods used at Accurate Testing and how the lab maintains a specified level of quality control associated with the experimental method. Methods, validation information, and analysis control information shall be kept on record in the QA/QC file under the control of the QA Coordinator.

8.2 Methods

8.2.1 Accurate Testing uses only established methods for routine analytical testing. These methods are found in seven basic references. They are:

8.2.1.1 "Standard Methods for the Examination of Water and Wastewater," 22nd edition 2012, American Public Health Association, et. al., Washington D.C.

8.2.1.2 "Standard Methods for the Examination of Water and Waste Water," 19th edition 1995, American Public Health Association, et. al., Washington D.C.

8.2.1.3 "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020 March 1983 US EPA EMSL, Cincinnati, Ohio.

8.2.1.4 "Methods for the Determination of Metals in Environmental Samples," EPA-600/4-91-010 June 1991 US EPA, Washington, D.C.

8.2.1.5 "Methods for the Determination of Metals in Environmental Samples Supplement I," EPA-600/R-94-111 May 1994 US EPA, Washington, D.C.

8.2.1.6 "Test Methods for Evaluating Solid Waste," SW-846, Third Edition, US EPA, Washington, D.C.

8.2.1.7 Soil, Plant and Water Reference Methods for the Western Region, 2005 3rd Edition.

8.2.2 The QA Coordinator is responsible for ensuring that the most current revisions of the methods are present in the lab. Outdated copies are removed from the lab and archived.

8.2.3 Non-routine methods are obtained from in-house development or through scientific literature or other sources and can be found in the Methods Manual.

8.3 Standard Operating Procedures

8.3.1 In addition to the methods listed in the reference materials, the laboratory maintains a complete set of SOPs, which describe specifically how the EPA, ASTM, etc. method is performed at this laboratory. Specific instrumentation is listed, QA/QC information, reporting limits, deviations from the original method, function and control checks.

8.3.2 The format of the ATL SOP for methods is exactly that as listed in the original method. Specifics are given under each section heading.

1. Scope and Application
2. Definitions
3. Summary Method
4. Safety
5. Sample Rejection and Interferences
6. Handling and Preservation
7. Equipment and Supplies
8. Quality Control
9. Procedure
10. Interpretation
11. Data and Reporting
12. Waste Management
13. References
14. Distribution
15. Changes from previous Revision
16. Forms

8.4 Method Validation

8.4.1 The production of data, which is legally defensible, may require seven aspects of the method areas to be evaluated.

1. Accuracy - how close the data result is to the true value. The main components are precision (affected by random error) and bias (systematic error). Accuracy is achieved by the proper use and maintenance of the instruments, obtaining quality reference materials, proper standard and sample prep, etc. ATL evaluates the accuracy of the method by analyzing samples of known concentration such as Performance Evaluation (PE) check samples. Comparison of single point daily calibrations to extensive multi-point calibrations may also be performed. Results of matrix spike analyses are also used.
2. Bias - a measure of systematic error. It has two components: method and the laboratories use of the method. *Method bias* is the difference between the grand average and the known value. The *laboratory bias* is the difference between the laboratory average recovery and the true value.
3. Precision - how reproducible one result is to a repeat analysis. ATL routinely performs analyses on duplicate prepared samples to determine precision. Most ATL Non-chromatographic methods vary as to the frequency of duplicate analysis. Refer to the specific method SOP.
4. Linearity - achieving a one to one ratio of instrument response to increasing sample concentration. Specifically, the instrument

manufacturer or the original method often dictates the linearity ranges. When not given, a working range for a routine experiment type will be determined and documented.

5. Selectivity - the ability to differentiate one compound or analyte from another. Analytical methods used are generally very selective in nature. For example, atomic absorption experiments require lamps, which are specific to the analysis of only certain elements. Selectivity is further addressed in each SOP.

6. Stability - this refers to the chemical steadiness of the instrument, standards, and samples over time. Instrument stability is often addressed in the original method with requirements such as recalibration every 12 hours automatically or recalibration when the operator notices drift. Data may be discarded, and samples repeated if the system became unstable or severe drift was noted during an automated run. Of other concerns are the stability of standards and samples. All SOPs will have complete storage statements regarding these items. Holding times, temperature requirements, and the need for preservatives are listed.

7. Detection Limits - There are several types of detection limits; method detection limits, instrument detection limits, practical quantitation limits. All ATL methods shall have specific reporting limits given, which are based on the method detection limits. These are based on a statistical evaluation of spiked samples which have been carried through the entire experimental procedure.

8.5 Function and Control Checks

8.5.1 Checks will be made to determine the day-to-day instrument performance, variances in analyst's techniques, and effects due to sample matrices. A Sample Prep Log is maintained for each sample; recording spike, QC, matrix, and reagent information. A copy of this log can be found in *Appendix B, Forms and Log Sheets* on page 40 of this manual.

8.5.2 *Function checks* refer to hardware related items such as background contamination, mechanical instrument performance; which influence calibrations, and accuracy.

8.5.3 *Control checks* are those which involve statistical evaluations of data on a long-term basis.

8.5.4 Checks are performed through a variety of techniques, which include:

8.5.4.1 Check Standards - used to monitor the precision and accuracy of laboratory performance, irrespective of sample matrix effects. A solution of known concentration is used to check the precision of analyses (and bias due to calibration).

8.5.4.2 Blanks - Instrument blanks used to determine background contamination due to the analytical hardware.

8.5.4.3 Method blanks - used to indicate interferences or contamination due to the preparation of samples or to the laboratory environment.

8.5.4.4 Trip blanks - used to determine if samples are contaminated prior to receipt at the laboratory.

8.5.4.5 Duplicates and Matrix Spikes - used to determine the recovery of analytes of interest for each matrix, the accuracy of the method, and the reproducibility (precision) of the technique. Depending on the method, samples may be run in duplicate and/or be spiked in duplicate to determine precision.

8.5.4.6 Standard Responses - comparison of a daily standard to previous standards in order to determine the stability of stock standards and instrument drift.

8.5.4.7 Instrument or Signal Intensities - used to determine variances in lamp intensities and mirror alignments.

8.6 Control Charts

8.6.1 ATL utilizes six types of control charts: PBLK, PQL, LFB, QC Standard, Duplicate, and MS.

1. PBLK (Prepared Blank)- Analyzed with each batch of samples and plotted to assess contamination levels in the laboratory. Predetermined guidelines are used for accepting or rejecting data based on the level of blank determination.

2. PQL (Practical Quantitation Level) - MDL x 2.2, analyzed with each batch of samples, the recovery is calculated to determine if the reporting limit is viable. Results are plotted on control chart with upper and lower control limits to assess if sensitivity is changing.

3. LFB (Lab Fortified Blank) - to detect the presence of bias in analyses. Results are plotted on control chart with upper and lower control limits.

4. QC Standard (Quality Control Standard) - A solution (from a different source than the analytical standard) of known concentration is used to check the precision of analyses. Standard solutions are repetitively analyzed to enable calculation of the mean and standard deviation for the series of determinations. Results are plotted on control chart with upper and lower control limits to facilitate detection of a systematic error or that precision has worsened.

5. Duplicate - The relative % difference between the two results are plotted on a control chart with zero as the expected result.

6. MS (Matrix Spike) - Intended to detect the presence of bias in the sample matrix. Results are plotted on control chart with upper and lower control limits.

8.6.2 It is the responsibility of the QA Coordinator to establish and monitor appropriate items for methods which require a high level of quality control. This is to determine if a system is out of control, to aid in determining which aspect of a system is at fault, and to provide an indication of the results of corrective action. Each SOP will state which parameter must be monitored. Periodically, the QA Coordinator will coordinate the revision of control limits based on statistical evaluations of data supplied by and collated by the analysts.

9.0 FACILITIES, EQUIPMENT, AND PREVENTIVE MAINTENANCE

9.1 Purpose and Scope

9.1.1 This section describes briefly the facilities, which comprise ATL, and the equipment used to analyze samples. General guidelines for conducting preventative maintenance are also given. This section of the manual applies to all equipment used to generate client data, which includes refrigerators for sample storage, instruments used to calibrate or standardize others, and the individual measurement devices.

9.2 Facilities

9.2.1 ATL is a secure facility encompassing 3,200 square feet. The facility is maintained at 72-74 degrees by means of standard heating and ventilation equipment. Normal business hours are 7:30 AM to 4:30 PM Monday through Friday.

9.2.2 Security:

9.2.2.1 Overall security is maintained by the controlled distribution of perimeter door keys. Off-site monitored electronic

security system is in place. Visitors are not allowed in the laboratory unless accompanied by ATL personnel.

9.2.2.2 A current signature list is maintained including printed signature and initials, signed signature and initials, date of employment, and date of termination. This document identifies all individuals at ATL that handle and process samples and documents.

9.2.3 Sample and Standard Storage:

9.2.3.1 Refrigerators are used for sample storage if necessary. Additional information on this subject can be found in section 6 of this manual. Standards are kept separately in department refrigerator units and maintained at 4°C. All refrigerator temperatures are monitored electronically. Records of temperature are maintained in the QA/QC file.

9.2.3.2 Samples are maintained at the appropriately controlled temperature until their analysis is completed. After that point, they are moved to the sample storage, which is not temperature controlled.

9.2.4 Hoods:

9.2.4.1 The facility maintains several fume hoods for the safety of its employees and in accordance with various methodologies. Hoods are monitored monthly as part of the routine safety inspection and must maintain a hood velocity required by the testing performed. Hood velocities will be maintained at 50 or 360 FPM as needed.

9.2.5 Chemical and Reagent Storage:

9.2.5.1 The facility has a variety of storage rooms and cabinets and proper storage of reagents and chemicals.

9.2.5.2 All pertinent information relating to each chemical placed into stock is noted.

9.3 Instrumentation

9.3.1 The lab maintains a full complement of analytical instrumentation employed in all stages of sample processing. A list of major components and their applications can be found in *Appendix A*.

9.3.2 ATL uses a variety of computers and LIMS systems for general data handling, sample control, and report generation.

9.3.3 Maintenance and Preventive Maintenance

9.3.3.1 Laboratory equipment is used and maintained in accordance with the manufacturer's recommendations. Several of the instruments are under manufacturer's warranties and service contracts with the manufacturer to provide routine maintenance and emergency services if needed.

9.3.3.2 The laboratory also conducts an orderly program of positive actions (equipment cleaning, lubricating, reconditioning, adjusting, and/or testing) to prevent instruments or equipment from failure during use. The purpose of this preventive maintenance program is to increase measurement system reliability, reduce downtime, reduce costs, and improve data validity.

9.3.3.3 The physical location of instruments will also be taken into account. Proximity to temperature extremes, vibration, sources of cross-contamination, etc. will be evaluated prior to installation of any measurement device or when additional procedures or instruments are added to a room currently operating such device.

9.3.3.4 In addition to the physical integrity of parts and equipment, the proper operation of the equipment has a significant effect on its performance. The QA Coordinator will determine the training requirements of analysts necessary for the proper operation of all equipment.

9.3.3.5 Since instrument calibration is commonly the responsibility of the operator in addition to preventive maintenance tasks, a combined preventive maintenance-calibration schedule will be used in those cases.

10.0 REFERENCE STANDARDS

10.1 Purpose and Scope

10.1.1 This section discusses the use of Standard Reference materials available from the National Institute of Science and Technology, SPEX, or other reliable sources.

10.2 Policies

10.2.1 ATL will use reference standards of known purity at all times and will take measures to ensure the stability of those materials. Additional control measures are present to determine if standard materials have degraded during use.

10.3 Purchase and Receipt

10.3.1 Standards are to be obtained from reputable sources such as major manufacturers, NIST, SPEX, APG, ERA, EM Science, etc. The purity as a percent value or the known concentration of diluted standards must be given. All standards are to be 96% pure or greater. In the event that purity is below 96%, corrections must be made for the listed purity.

10.3.2 In some instances, standards are obtained from local suppliers and are assumed 100% pure, unless in-house testing of the standard indicates otherwise. Documentation of where, when, by whom, and what type of standard was obtained is to be kept on file.

10.3.3 Upon receipt at the lab, each standard is marked with the date received, assigned a lot number, if not given by the manufacturer, and stored according to the manufacturer's specifications.

10.3.4 Certificates of analysis (or other paperwork listing purity) will be kept on file in the QA/QC file for all reference materials used in the calibration and standardization of equipment and methodologies.

10.3.5 In the absence of manufacturer's recommendation, the following maximum holding times are assigned:

Inorganic solids - 3 years
Inorganic solutions - 2 years
Buffer solutions - 12 months

10.3.6 Standards are stored at ambient room temperature, 4°C (refrigerator), or -10 to -20°C (freezer). In general, inorganics are stored at ambient room temperature or the refrigerator, and diluted organic solutions stored in either the refrigerator or freezer depending on volatility.

10.4 Daily Use

10.4.1 Documentation of standard prep is discussed in the standard operating procedure for each method. Standard prep log sheets are maintained and contain information such as a compound, manufacturer, lot, purity/initial concentration, aliquot volume, final volume, solvent, and final concentration. Each in-house prepared standard will be assigned a

reference number and storage/holding time condition. Each prepared standard will be labeled with type, concentration, preparer, reference number, and date.

10.4.2 The suitability of standards received from vendors and standards prepared in the lab is to be evaluated routinely as part of the experimental process. Deviation in standard response, such as lower area/signal counts, increases in impurity peaks, etc. may indicate degradation of the standard. Standards will be either discarded or may under certain circumstances be reassigned a new purity value and holding time after scientific evaluation by the group leader.

10.4.5 Refer to the non-conformance section of this manual for more information concerning deviations of standards.

11.0 LABORATORY DOCUMENTATION

11.1 Purpose and Scope

11.1.1 The purpose of this section is to describe briefly some of the aspects of the documentation process, which is associated with the generation of client data. The documentation process applies to all areas of the laboratory and ensures the validity of data from initial receipt of samples to archiving of files.

11.1.2 All records are confidential and may not be copied without permission of the laboratory director. All entries are made with indelible ink and corrections are to be a single line crossed out, initialed, and dated. All documentation is kept for ten years.

11.2 Client Files

11.2.1 Upon receipt of samples, a work order file is created by Sample Log-in. The file maintains a complete written record of all information concerning a particular project. The following information is contained in the files:

- Chain-of-Custody forms
- Lab Sample Identification Numbers
- Copy of the complete final report sent to the client.

11.2.2 After the log-in, an invoice is generated. When the work order is completed the final report and invoice is mailed to the client, a copy of the analytical results page(s) is made and placed with the original client file in chronological order by lab number.

11.3 Sample Tracking

11.3.1 Ensuring that data generated is properly attributed to specific samples requires documentation of sample tracking. Upon receipt of samples, a record is generated in the "Sample Receipt Tracking Preservation" log sheet. Samples are tracked within the Laboratory such as specific location (Lab, Refrigerator, Storage, etc.) if samples are preserved (HNO₃, H₂SO₄, HCl, NaOH), or an aliquot is taken from the original container. Changes are made by individual analysts handling the specific sample(s).

11.3.2 A copy of the Sample Tracking log can be found in *Appendix B, Forms and Log Sheets*.

11.3.3 During the analysis of samples, a variety of worksheets, sample prep sheets, instrument bench sheets, and Lab Information Management System (LIMS) are used to track the sample's data. Bench sheets are generally specific to certain laboratory groups or specific instruments.

11.4 Standard preparation information sheets

11.4.1 Complete information concerning the preparation of standards is kept on file specific to a certain group of tests. Standard prep sheets contain information such as the compound name, manufacturer, lot number, aliquot volumes, and preparer's initials.

11.4.2 Standard solution are made in 50mL volumetric flask if a larger volume is need, or the HAMILTON ML530b diluter/dispenser is utilized to make volumetric dilutions of Stock Standards.

11.5 Instrument and Maintenance Logbooks

11.5.1 Information concerning the routine and non-routine maintenance/repair, calibration, and use of instruments are kept with the instrument.

11.6 Electronic Data and Programs

11.6.1 A variety of instruments used at Accurate Testing Labs employ sophisticated data acquisition, retrieval, and manipulation programs. Both raw data and final client-ready results may be present on electronic storage media. Copies of all procedures, programs, raw data, integration files, calibration files, and analytical results will be kept on file.

11.7 Hard Copy Data

11.7.1 Chromatograms, integration results, and other data printed or drawn onto paper will be stored with the first sample of the batch. Raw paper data is kept for ten years.

11.8 Data handling

11.8.1 ATL uses a local network computer system for data handling. A laboratory information management system (LIMS, Visual LabPro.Net®) is integrated with all of our laboratory's sample control, quality control, raw data storage, and report generation.

11.8.2 Most of our equipment uses the network computer system or a serial port data transfer (TALTech, WinWedge) to download data directly into the LIMS.

11.8.3 Chain of Custodies and the bench sheets generated by the analyst (s) are scanned into .pdf files and linked to the appropriate samples in the LIMS system for easy retrieval.

11.8.4 All paperwork generated during receiving, testing, and the final report of a sample is stored in a file cabinet or file storage boxes for retrieval.

11.8.5 A hardcopy of the invoiced report is mailed and also emailed to the customer as soon as the work order is completed and approved.

11.9 Other

11.9.1 Other documentation is also present in the lab. Quality control information such as surrogate recovery control charts, tabulations of samples which indicate when duplicates or matrix spikes are required (every 10 or 15th sample), etc. are also present.

12.0 DATA VALIDATION

12.1 Purpose and Scope

12.1.1 This section explains the need for data validation and the methods of data validation, which will be employed by this laboratory. Data validation can be accomplished by several methods and can be manual or computerized.

12.1.2 Data validation is the process in which data is checked, accepted, or rejected based on a set of criteria. Validation is performed to

ensure that the data generated accurately reflects the true values and to isolate spurious values, which may not have been automatically rejected.

12.2 General

12.2.1 Validation of data involves many aspects of the data generation process. It requires review by all individuals involved with a particular sample, instrument, or QA/QC program. Data validation involves the following:

12.2.1.1 Sample collection, receipt, and in-lab sample control: Samples must have been collected and delivered to the facility in the appropriate containers, with appropriate preservative, and within prescribed holding times.

12.2.1.2 Analytical methodologies and analysts: Methods and procedures are validated, and the results of the validation process kept on file in the QA/QC Coordinator's file. The methodology was discussed earlier in this manual. The individual analyst plays an important role in determining the validity of data as it is generated. Instrument performance, QC criteria, standard responses, reagent blank analysis, matrix spikes, and duplicates all influence the determination that client data is valid. Each method SOP has specified criteria for determining the validity of the experiment. Data values, which appear to be above, or below normal values expected for the sample matrix or project, will be investigated.

12.2.1.3 Lab Directors function is to audit the documentation created/maintained by the individual analysts concerning instruments, methods, finished data reported to clients, specific project requirements, and all QC results.

12.2.1.4 QA Coordinator: The QA Coordinator establishes and revises those conditions by which the validity of the data is judged. These include; determining warning and control limits for matrix spike recoveries, surrogate recoveries, and Relative Percent Deviation (RPD). The QA Coordinator ensures current test methods and SOPs are being employed and that analysts are properly trained to perform assigned tasks. The QA Coordinator also reviews data management procedures implemented to assure accuracy in client report transcriptions.

12.2.1.5 Administrative personnel: Administrative personnel is responsible for maintaining data validity through control measures designed to eliminate all typing or transcription errors, to provide

reports which contain all required information in a clear and concise manner, and to provide reports which meet all the validity requirements of the client's project and of the lab.

13.0 NON-CONFORMANCE, CUSTOMER CONCERNS, MCL VIOLATIONS, AND AUDITS

13.1 Purpose and Scope

13.1.1 This section sets forth the procedures and responsibilities for handling experiments in which QC indicates deviations from established norms, customer concerns/complaints, MCL violation, and negative audit results. This section applies to all technical complaints regardless of the source.

13.2 Experimental Non-conformance

13.2.1 Due to the complex nature of many of the experiments and the high level of quality being carried out, deviations from established norms may occur. Deviations may be due to gradual changes in the hardware from the initial conditions. There may be deviations due to changes in standard solutions or matrix effects of samples, which may also influence surrogate recoveries, etc.

13.2.2 When deviations occur, the analysts evaluate the system and the data to warrant continuing the experiment and using data generated.

13.3 Customer Concerns and Complaints

13.3.1 All technical complaints and negative comments or suggestions from customers, government agencies, or other sources outside the laboratory will be turned over to the Quality Control Coordinator for review, handling, and reply. In each case, he will advise the individuals concerned as to the nature of the complaint. Additionally, he will initiate corrective action and the finding of a solution to the problem, the Quality Control Coordinator will advise the customer accordingly.

13.4 MCL Violations

13.4.1 Notification of High Contaminant Levels. The chemistry supervisor or designee must notify the appropriate regulatory agency or drinking water coordinator by phone as soon as feasible of any nitrate and nitrite level exceeding the current MCL including subcontracted samples. Notification must also be made when any other regulated chemical or radiological contaminant exceeds four (4) times the MCL.

13.4.2 Notification of Positive Microbiological Results. The microbiological supervisor or designee is responsible for an immediate telephone notification to the appropriate regulatory agency in the case of a positive result for a microbiological test. If the RA or DWC is not available, the results must be given to the person designated by the RA or DWC to take the information.

13.5 Negative Audit Reports

13.5.1 In the case of corrective action taken to satisfy the comments or suggestions of outside auditors from accrediting organizations, an in-depth investigation of the problem area will be undertaken. Evaluations of the equipment, standard/sample prep, analyst training, etc. will be documented. A detailed explanation will be given of measures taken to prevent recurrence of problems causing the negative comments. These reports will be filed in the QA/QC file.

14.0 SUBCONTRACTING

14.1 Purpose and Scope

14.1.1 This section applies to outside laboratories doing analytical or testing work on a contract basis.

14.2 Quality Assurance in Contract Laboratories

14.2.1 Each contract laboratory, which this laboratory employs for providing testing services, chemical analyses, or calibration services, will maintain its own internal quality assurance system.

15.0 PERSONNEL QUALIFICATIONS AND TRAINING

15.1 Purpose and Scope

15.1.1 The purpose of this section is to set forth the training methods, evaluation, and qualification procedure used in the laboratory. All personnel involved in any function affecting data quality (sample receipt, analysis, testing, data reduction, and quality control and assurance) will have sufficient training and technical expertise to generate complete high-quality data.

15.1.2 The Quality Control Coordinator is responsible for seeing that the required training is made available to this personnel.

15.2 Qualifications

15.2.1 The laboratory evaluates all prospective job applicants for scientific knowledge and professionalism. Minimum scientific requirements for specific job categories are given in the standard operating procedure manual. These follow the guidelines given for skill ratings and requirements in the “Handbook of Analytical Quality Control in Water and Wastewater Laboratories” published by the EPA (document EPA-600/4-79-019, Chapter 9) and the EPA Contract Laboratory Program (CLP) Statement of Work (document OLM01.0, section III).

15.3 Continuing Education Opportunities

15.3.1 In addition to prior work and educational experience, ATL actively encourages its employees to expand and refine their job skills and knowledge.

15.4 In-House Training

15.4.1 ATL conducts in-house training on chemistry, analytical methods/techniques, QA/QC principles, etc. These add to the general and specific knowledge and skill of its employees.

15.5 In-House Training Methods

15.5.1 On the job an experienced analyst provides training to a new analyst. The analyst will be given sufficient time during the training process to interact extensively with the experienced trainer in order to understand the theoretical principles of the procedure and to observe the actual work being conducted in an unhurried, controlled manner.

15.5.2 Next, the analyst will perform the operation under the direct supervision of the experienced analyst. The analyst then performs the experiment independently with limited supervision.

15.6 Training Evaluation

15.6.1 Training will be evaluated in terms of (1) level of knowledge and skill achieved by the operator from the training, and (2) the overall effectiveness of the training including determination of the training areas, which need improvement.

16.0 QUALITY CONTROL PROTOCOL

16.1 Purpose and scope

16.1.1 The minimum requirements of this program consist of an initial demonstration of laboratory capability, and the periodic analysis of laboratory reagent blanks, fortified blanks, and other laboratory solutions as a continuing check on performance. The laboratory will maintain performance records that define the quality of the data that are generated.

16.2 Initial Demonstration of Performance

16.2.1 The initial demonstration of performance is used to characterize instrument performance (determination of LCRs and analysis of QCS) and laboratory performance (determination of MDLs) prior to performing analyses by various methods.

16.3 Linear Calibration Range (LCR)

16.3.1 *This applies only if a single standard is used for calibration.* The LCR will be determined initially and verified every 6 months or whenever a significant change in instrument response is observed or expected. The initial demonstration of linearity will use sufficient standards to ensure that the resulting curve is linear. The verification of linearity uses a minimum of a blank and three standards. If any verification data exceeds the initial values by $\pm 10\%$, Linearity will be re-established. If any portion of the range is shown to be nonlinear, sufficient standards will be used to clearly define the nonlinear portion.

16.4 Quality Control Standard (QC) Prepared or purchased from a secondary source (different than the primary source used for calibration).

16.4.1 A Quality Control Standard is analyzed with each batch to meet data-quality needs. If the determined concentrations are not within $\pm 10\%$ of the stated values, the performance of the determinative step of the method is unacceptable. The source of the problem will be identified and corrected before continuing with on-going analyses.

16.5 Method Detection Limit (MDL)

16.5.1 MDLs are established for all analytes, using reagent water (blank) fortified at a concentration of two to five times the estimated instrument detection limit (IDL). To determine MDL values, analyze seven replicate aliquots on three nonconsecutive days of the fortified reagent water and processed through the entire analytical method. All calculations defined in the method are performed and the concentration values in the appropriate units are reported. MDLs are calculated as follows: $MDL = (t) \times (S)$ where t = Student's t value for a 99% confidence level and a standard deviation estimate with $n-1$ degrees of freedom [$t=3.14$ for seven replicates]; and S = standard deviation of the replicate analyses.

16.5.2 Ongoing Annual Verification Ensure that at least seven spiked samples and seven method blanks are completed for the annual verification. If only one instrument is in use, a minimum of seven spikes are still required, but they may be drawn from the last two years of data collection.

16.6 Laboratory Reagent Blank (PBLK)

16.6.1 The laboratory analyzes at least one PBLK with each batch of samples. The LRB is analyzed exactly like a sample. Data produced is used to assess contamination in the laboratory environment. Values that exceed the MDL; laboratory or reagent contamination should be suspected, and corrective actions are taken before continuing the analysis.

16.7 Laboratory Fortified Blank (LFB)

16.7.1 The laboratory analyzes at least one LFB with each batch of samples. The LFB is analyzed exactly like a sample. Accuracy is calculated as percent recovery. If the recovery of any analyte falls outside the required control limits of 90-110%, that analyte is judged out of control, and the source of the problem should be identified and resolved before continuing analyses.

16.7.2 The laboratory uses LFB analyses data to assess laboratory performance against the required control limits of 90-110%. When sufficient internal performance data become available (usually a minimum of 20-30 analyses), optional control limits are developed from the percent mean recovery (\bar{x}) and the standard deviation (S) of the mean recovery. This data is used to establish the upper and lower control limits as follows:

$$\begin{aligned}\text{Upper control limit} &= \bar{x} + 3S \\ \text{Lower control limit} &= \bar{x} - 3S\end{aligned}$$

16.7.3 The optional control limits must be equal to or better than the required control limits of 90-110%. After each five to ten new recovery measurements, new control limits can be calculated using only the most recent 20-30 data points. Also, the standard deviation (S) data is used to establish an ongoing precision statement for the level of concentrations included in the LFB. This data will be kept on file and be available for review.

16.11 Instrument Performance Check Solution (IPC)

16.11.1 For all determinations, the laboratory will analyze the IPC (a mid-range check standard) and a calibration blank immediately

following daily calibration, after every tenth sample (or more frequently, if required), and at the end of the sample run. Analysis of the IPC solution and calibration blank immediately following calibration must verify that the instrument is within $\pm 5\%$ of calibration. Subsequent analyses of the IPC solution must verify the calibration is still within $\pm 10\%$. If the calibration cannot be verified within the specified limits, the IPC solution is re-analyzed. If the second analysis of the IPC solution confirms calibration to be outside the limits, sample analysis is discontinued; the cause determined and/or in the case of drift, the instrument recalibrated. All samples following the last acceptable IPC solution must be re-analyzed. The analysis data of the calibration blank and IPC solution must be kept on file with the sample analyses data.

16.12 Laboratory Fortified Sample Matrix (MS)

16.12.1 The laboratory adds a known amount of analyte to a minimum of 10% of the routine samples. In each case, the MS aliquot must be a duplicate of the aliquot used for sample analysis. The analyte concentration must be high enough to be detected above the original sample and should not be less than four times the MDL. The added analyte concentration should be the same as that used in the laboratory-fortified blank.

16.12.2 If the concentration of fortification is less than 25% of the background concentration of the matrix, the matrix recovery should not be recalculated.

16.12.3 The percent recovery for each analyte is calculated, corrected for concentrations measured in the unfortified sample, and these values are compared to the designated MS recovery range 90-110%. Percent recovery is calculated using the following equation:

$$R = \frac{C_s - C}{S} \times 100$$

where R=percent recovery, C_s =fortified sample concentration, C=sample background concentration, S=concentration equivalent of analyte added to sample.

16.12.4 As sufficient data becomes available (usually a minimum of 20-30 analyses), laboratory performance is assessed against recovery limits of 80-120%. When sufficient internal performance data becomes available to control limits are developed from percent mean recovery and the standard deviation of the mean recovery.

16.12.5 If the recovery of any analyte falls outside the designated MS recovery range and the laboratory performance for that analyte is shown to be in control, the recovery problem encountered with the MS is judged to be either matrix or solution related, not system related.

16.12.6 Where reference materials are available, they are analyzed to provide additional performance data. The analysis of reference samples is a valuable tool for demonstrating the ability to perform the method acceptably.

16.12.7 In recognition of rapid advances occurring in analyses, the analyst is permitted certain options, such as the use of different columns and/or eluents, etc., to improve the separations or lower the cost of measurements. Each time such modifications to the method are made, the analyst is required to repeat the Initial Demonstration of Performance.

16.12.8 The laboratory adopts additional quality assurance practices for use with these methods. The specific practices that are most productive depend upon the needs of the laboratory and the nature of the samples. Field duplicates may be analyzed to monitor the precision of the sampling technique. When doubt exists over the identification of a peak, confirmatory techniques such as sample dilution and fortification must be used. Whenever possible the laboratory should perform an analysis of quality control check samples and participate in relevant performance evaluation sample studies.

16.13 Instrument Detection Limit (IDL)

16.13.1 The IDL is the concentration equivalent to a signal, for the analyte of interest, which is the smallest signal that can be distinguished from background noise by a particular instrument.

16.13.2 Using reagent water (blank) to determine IDL values, analyze ten replicate aliquots processed through the entire analytical method.

16.13.3 IDLs are calculated as follows: $IDL = \text{Three times the Standard deviation (S) with ten replicate readings.}$

16.14 Mathematical Equations used to calculate each type of acceptance criteria.

All QA/QC data, limits and control charts, (UCL/LCL and UWL/LWL) are calculated and stored in the LIMS system under the QA/QC Test results file in a batch format.

16.14.1 % Recovery = $\text{analytical result} * 100 / \text{spiked concentration.}$

16.14.2 Relative % difference = $100 * \text{ABS (analytical result - duplicate result)} / ((\text{analytical result} + \text{duplicate result}) / 2).$

17.0 DEFINITIONS.

17.1 Calibration Blank

- A volume of reagent water acidified with the same acid matrix as in the calibration standards. The calibration blank is a zero standard and is used to auto-zero the instrument.

17.2 Calibration Standard (CAL)

- A solution prepared from the dilution of stock standard solutions. The CAL solutions are used to calibrate the instrument response with respect to analyte concentration.

17.3 Dissolved Analyte

- The concentration of an analyte in an aqueous sample that will pass through a 0.45 µm membrane filter assembly prior to sample acidification.

17.4 Field Reagent Blank (FRB)

- An aliquot of reagent water or other blank matrices that is placed in a sample container in the laboratory and treated as a sample in all respects, including shipment to the sampling site, exposure to the sampling site conditions, storage, preservation, and all analytical procedures. The purpose of the FRB is to determine if method analytes or other interferences are present in the field environment.

17.5 Instrument Detection Limit (IDL)

- The concentration equivalent to the analyte the signal which is equal to three times the standard deviation of a series of ten replicate measurements of the calibration blank.

17.6 Instrument Performance Check (IPC) Solution

- A solution of method analytes used to evaluate the performance of the instrument system with respect to a defined set of method criteria.

17.7 Laboratory Duplicates (DUP)

- Two aliquots of the same sample taken in the laboratory and analyzed separately with identical procedures. Analyses of the sample and the DUP indicates precision associated with laboratory procedures, but not with sample collection, preservation, or stored procedures.

17.8 Laboratory Fortified Blank (LFB)

- An aliquot of PBLK to which known quantities of the method, analytes are added in the laboratory. The LFB is analyzed exactly like a sample, and its purpose is to determine whether the methodology is in control and whether the laboratory is capable of making accurate and precise measurements.

17.9 Laboratory Fortified Sample Matrix (MS)

- An aliquot of an environmental sample to which known quantities of the method analytes are added in the laboratory. The MS is analyzed exactly like a sample, and its purpose is to determine whether the sample matrix contributes bias to the analytical results. The background concentrations of the analytes in the sample matrix must be determined in a separate aliquot and the measured values in the LFM corrected for background concentrations.

17.10 Laboratory Reagent Blank (PBLK)

- An aliquot of reagent water or other blank matrices that are treated exactly as a sample including exposure to all glassware, equipment, solvents, reagents, and internal standards that are used with other samples. The PBLK is used to determine if method analytes or other interferences are present in the laboratory environment, reagents, or apparatus.

17.11 Linear Dynamic Range (LDR)

- The concentration range over which the instrument response to an analyte is linear.

17.12 Matrix Modifier

- A substance added to the graphite furnace along with the sample in order to minimize the interference effects by selective volatilization of either analyte or matrix components.

17.13 Method Detection Limit (MDL)

- The minimum concentration of an analyte that can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero.

17.14 Quality Control Sample (QC)

- A solution of method analytes of known concentrations which are used to fortify an aliquot of PBLK or sample matrix. The QC is obtained from a source external to the laboratory and different from the source of calibration standards. It is used to check either laboratory or instrument performance.

17.15 Solid Sample

- For the purpose of this method, a sample taken from material classified as either soil, sediment or sludge.

17.16 Standard Addition

- The addition of a known amount of analyte to the sample in order to determine the relative response of the detector to an analyte within the sample matrix. The relative response is then used to assess either an operative matrix effect or the sample analyte concentration.

17.17 Stock Standard Solution

- A concentrated solution containing one or more method analytes prepared in the laboratory using assayed reference materials or purchased from a reputable commercial source.

17.18 Total Recoverable Analyte

- The concentration of analyte determined to be in either a solid sample or an unfiltered aqueous sample following treatment by refluxing with hot dilute mineral acid (s) as specified in the method.

17.19 Water Sample

- For the purpose of this method, a sample taken from one of the following sources: drinking, surface, ground, storm runoff, industrial or domestic wastewater.

18.0 CHANGES MADE FROM PREVIOUS REVISION.

Revision	Date	Responsible Person	Description of Change
17	March 2015	April Capello	Layout change in compliance with EPA guidance.
18	Jan. 2016	April Capello	Corrected typographical and spacing errors.
19	Feb. 2017	April Capello	Corrected typographical errors. Change in staff.
20	Nov. 2018	Walter Mueller	Corrections and additions from findings of the inorganic audit Nov. 14, 2018
21	April 2020	Walter Mueller	Change in staff.
22	May 2021	Walter Mueller	Corrected typographical and grammatical errors.

Appendix A

LABORATORY INSTRUMENTATION

AGILENT 240Z AA Spectrometer
BARNSTEAD/THERMOLYNE Cimarec, Heated magnetic stirrer
BINDER Model 720BF Incubator
BRAND TECH, Accu-jet, Pipette controller
BRAND TECH, Dispensette III, the Bottle-top dispenser
BRAND TECH, Seripettor, Bottle-top dispenser
BRAND TECH, Titrette 25 ml, Burette
BRAND TECH, Transferpette 10-100 μ l, 10-200 μ l, 10 – 1000 μ l, 100 μ l, 1000 μ l
BÜCHI Heating Block Digester K-437 for TKN
BÜCHI K-350, steam distillation for Ammonia and TKN
CETAC Mercury Analyzer Model 7500
E-control systems, temperature monitoring, remote access, and alert system
Lab-Strong Rapids Pure (Type 1) Water Polishing unit

ELGA Purelab R-7, Water Purification System, RO, UV, 75 L Reservoir
FISHER ISO-Temp incubators
FISHER Scientific Accumet 50 meter with Conductivity/pH/Ion Electrode
HACH 2100P Turbidimeter
HACH DR 5000 Spectrophotometer
HACH DR/700 Colorimeter
HACH Reactor Block 200
HAMILTON ML530b diluter/dispenser
HEPA filtered enclosure for Hot Block
HORIZON Oil and Grease, automated extraction instrument
HORIZON Speed Vap III, a solvent evaporator for Oil and Grease
HOT BLOCK 36 well for 50 ml samples, the Temperature range is ambient to 180°C
HOT BLOCK 54 well for 50 ml samples, the Temperature range is ambient to 180°C
IKA HS260, Horizontal shaker
IKA Topolino, Magnetic stirrer
IKA Tube Mill for impact milling or cutting milling
METROHM Ion Chromatograph 761 analyzer
METTLER Toledo FiveEasy pH meter
METTLER Toledo MS802S Balance
METTLER Toledo XS204 Balance
MIELE G 7883, Professional Laboratory Glassware Dishwasher
NAPCO Model 9000-D Autoclave
NATIONAL 9000-D Autoclave
OMEGA OSXL650 Infrared Thermometer
OVENS, distillation units, refrigerators, and other general chemistry equipment.
PANASONIC LabAlert electronic temperature probes (Incubators Water bath and Refrigerators)
PRECISION circulating water bath, large and small
REICHERT Quebec Colony Counter
YSI 5100 Dissolved Oxygen Meter
SEAL Flow Injection Analysis System AA3
THERMO SCIENTIFIC Electrothermal, Heating mantel, and glassware for cyanide distillation
TRITECH RESEARCH PourBoy 4, Variable Speed Sterile Media Dispenser
TUTTNAUER 2540EPK Autoclave
VARIAN ICP 720-ES Axial, Analysis System
VELP SMS scrubber for BÜCHI Heating Block Digester K-437

	<input type="checkbox"/> DW <input type="checkbox"/> WW <input type="checkbox"/> Soil <input type="checkbox"/> Non-Potable <input type="checkbox"/> OTHER		<input type="checkbox"/> Laboratory <input type="checkbox"/> Fridge <input type="checkbox"/> Storage <input type="checkbox"/> Aliquot <input type="checkbox"/> Preservation	DATE TIME INITIAL	DATE TIME INITIAL	DATE TIME INITIAL	DATE TIME INITIAL	DATE TIME INITIAL	DATE TIME INITIAL
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Sample Receipt/Tracking/Preservation

Sample PREP/DIGESTION

Date: _____

LAB #	MATRIX	TEST(s)	Weight (g)/Vol (mL)	Final Vol (mL)	Acid (mL)	LFB, MS, MSD	Tech Initial
	<input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Other		<input type="checkbox"/> g or <input type="checkbox"/> mL		<input type="checkbox"/> HNO3 <input type="checkbox"/> HCL <input type="checkbox"/> H2O	ID Lot # Vol (ul)	
	<input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Other		<input type="checkbox"/> g or <input type="checkbox"/> mL		<input type="checkbox"/> HNO3 <input type="checkbox"/> HCL <input type="checkbox"/> H2O	ID Lot # Vol (ul)	
	<input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Other		<input type="checkbox"/> g or <input type="checkbox"/> mL		<input type="checkbox"/> HNO3 <input type="checkbox"/> HCL <input type="checkbox"/> H2O	ID Lot # Vol (ul)	
	<input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Other		<input type="checkbox"/> g or <input type="checkbox"/> mL		<input type="checkbox"/> HNO3 <input type="checkbox"/> HCL <input type="checkbox"/> H2O	ID Lot # Vol (ul)	
	<input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Other		<input type="checkbox"/> g or <input type="checkbox"/> mL		<input type="checkbox"/> HNO3 <input type="checkbox"/> HCL <input type="checkbox"/> H2O	ID Lot # Vol (ul)	
	<input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Other		<input type="checkbox"/> g or <input type="checkbox"/> mL		<input type="checkbox"/> HNO3 <input type="checkbox"/> HCL <input type="checkbox"/> H2O	ID Lot # Vol (ul)	
	<input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Other		<input type="checkbox"/> g or <input type="checkbox"/> mL		<input type="checkbox"/> HNO3 <input type="checkbox"/> HCL <input type="checkbox"/> H2O	ID Lot # Vol (ul)	



Appendix C – Accurate Testing Labs Sampling Requirements

ATL Accurate Testing Labs, LLC

7950 Meadowlark Way • Coeur d'Alene, ID 83815 • Phone (208) 762 8378 • Fax (208) 762 9082

Web site: www accuratetesting.com e-mail: mueller@accuratetesting.com

Environmental Chemical Testing Laboratory

Inorganic Analysis

PARAMETER	VOL.	CONTAINER	PRESERVATIVE	HOLD TIME
ACIDITY	250 ml	Plastic	None	14 Days
ALKALINITY	250 ml	Plastic	None	14 Days
AMMONIA	100 ml	Plastic	Sulfuric	28 Days
ASBESTOS	1000 ml	Plastic	None	48 Hours
BACTERIA (DW)	120-150 ml	Plastic/ Sterile	Sod. Thios.	30 Hours
BOD, 5-Day	1000 ml	Plastic	None	48 Hours
BROMIDE	100 ml	Plastic	None	28 Days
CBOD, 5 Day	1000 ml	Plastic	None	48 Hours
COD	250 ml	Plastic	Sulfuric	28 Days
CHLORIDE	100 ml	Plastic	None	28 Days
CHLORINE	100 ml	Plastic	None	Immediately
COLOR	50	Plastic	None	48 Hours
COLIFORM				
Total Count (Waste Water)	120-150 ml	Plastic/ Sterile	Sod. Thios./4deg.C	6 Hours
Fecal Count (Waste Water)	120-150 ml	Plastic/ Sterile	Sod. Thios./4deg.C	6 Hours
CYANIDE				
Free Cyanide	250 ml	Plastic	NaOH	14 Days
Total Cyanide	1000 ml	Plastic	NaOH	14 Days
Total/Amenable Cyanide	1000 ml	Plastic	NaOH	14 Days
FLUORIDE	100 ml	Plastic	None	28 Days
RADIOLOGICAL	1000 ml	Plastic	Nitric	6 Months
HARDNESS	100 ml	Plastic	Nitric	6 Months
METALS	500 ml	Plastic	Nitric	6 Months
Mercury	500 ml	Plastic	Nitric	28 Days
MBAS	1000 ml	Plastic	None	48 Hours
NITROGEN				

Nitrate	100 ml	Plastic	None	48 Hours
Nitrate/Nitrite	100 ml	Plastic	Sulfuric	28 Days
Nitrite	100 ml	Plastic	None	48 Hours
Total Kjeldahl	100 ml	Plastic	Sulfuric	28 Days
OIL & GREASE	1000 ml	Glass	Sulfuric or HCL	28 Days
pH	100 ml	Plastic	None	Immediately
PHENOLICS	1000 ml	Amb.Glass	Sulfuric	28 Days
PHOSPHORUS				
Total	100 ml	Plastic	Sulfuric	28 Days
Orthophosphate	100 ml	Plastic	Filt. Immed.	48 Hours
CONDUCTANCE	100 ml	Plastic	None	48 Hours
SULFATE	100 ml	Plastic	None	28 Days
SULFIDE	100 ml	Plastic	Zinc Acet. & NaOH	7 Days
SULFITE	100 ml	Plastic	None	Immediately
TOC	100 ml	Am. Glass	Sulfuric	28 Days
TOX	500 ml	Am. Glass	Sulfuric	28 Days
TOTAL SOLIDS	500 ml	Plastic	None	7 Days
T D S	500 ml	Plastic	None	7 Days
T. SETTLEABLE	1000 ml	Plastic	None	48 Hours
T S S	500 ml	Plastic	None	7 Days
T. VOLATILE SOLIDS	1000 ml	Plastic	None	7 Days
TURBIDITY	100 ml	Plastic	None	48 Hours



Appendix D – Accurate Testing Labs Chain of Custody Form & City of Coeur d’Alene Field Sample Log

Field Sample Log

City of Coeur d'Alene Stormwater Drainage Utility

MS4 Permit IDS028215

Grab Samples	CDA Lake Outfall Location	Spokane River Outfall Location
Date & Time		
Water Temp (C)		
Flow Appearance (color, odor, debris, etc.)		
Comments		
Sampled By:		